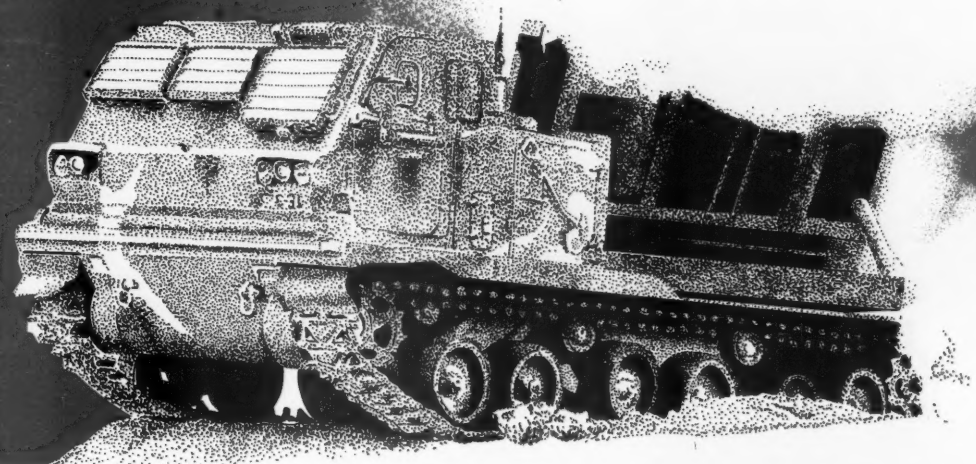
UNITED STATES ARMY

AVIATION DIGEST

FEBRUARY 1985

Field Artillery & Army Aviation



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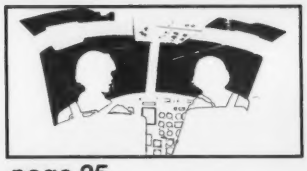

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Honorable John O. Marsh Jr.,
Secretary of the Army

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The mission of the *U.S. Army Aviation Digest* (USPS 415-350) is to provide information of an operational, functional nature concerning safety and aircraft accident prevention, training, maintenance, operations, research and development, Aviation medicine and other related data.

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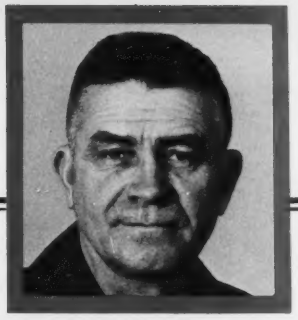
Major General Ellis D. Parker
Chief, Army Aviation Branch



Aviation Proponency Office

THIS IS MY first opportunity to "talk" with you on "page 1" since I assumed command of the Aviation Center last month. Because I have been at Ft. Rucker since last July as the assistant commandant, I am familiar with the splendid progress that has been made in the development of our new branch under the leadership of my predecessor, Major General Bobby J. Maddox. We can—and will— retain that momentum as we continue to improve the efficiency and effectiveness of Army Aviation. One of the key units that helped build that momentum is the Aviation Proponency Office at the Aviation Center.

When the Aviation Branch was established on 12 April 1983, the Aviation Branch Chief consolidated Aviation proponency at Ft. Rucker. On 1 September 1983 the Aviation Proponency Office was activated to carry out the responsibilities of management and professional development of Aviation personnel. The delegation of this proponency, with its inherent authority, and expansion to include warrant officers and enlisted personnel, introduces a new way of getting things done. Army Aviation personnel are, for the first time, playing a key role in developing personnel management policies that directly affect the force structure, force management and the individual professional development of Army Aviation personnel.

Through the Aviation Proponency Office the Aviation Center can incorporate Aviation related considerations into life-cycle personnel management policies, programs and procedures established subsequently by Headquarters, Department of the Army. The Aviation proponent is charged with gathering and evaluating information, identifying issues, setting priorities, formulating alternatives, coordinating actions and obtaining improvements in each step of the life-cycle personnel management process.

The Aviation Proponency Office is responsible to the Aviation School commandant for all Aviation Branch officer specialty codes (SC 15), warrant officer military occupational specialties (MOS) series 100, 150 and 160 and career management field (CMF) 67, 28 and 93.

An integral part of the Aviation proponency system is the Proponency Office at the Aviation Logistics School (USAALS), Ft. Eustis, VA. Working for the deputy assistant commandant, USAALS executes personnel management and specialty proponent functions and responsibilities for the Aviation Center for the "T" position of 15T, MOS 160 and CMF 67. The USAALS Proponency Office coordinates actions in these areas with the Aviation Center Aviation Proponency Office.

Commissioned officer, warrant officer and enlisted Aviation personnel are now involved with designing their own personnel management policies. If you have suggestions or recommendations, write to Commander, U.S. Army Aviation Center, ATTN: ATZQ-P, Ft. Rucker, AL 36362-5000. After your suggestion or recommendation is analyzed, it may be brought before the Aviation Specialty Proponent Committee as a potential "initiative." Initiatives approved by the committee are developed into recommended policy changes.

Through this system, the Aviation community can better influence the future of the Aviation Branch. The Aviation Proponency Office, on behalf of the proponent, ensures that the entire Aviation School and the Aviation Logistics School carry out their responsibility as the voice of the total Army Aviation force.

Major General John S. Crosby
Commander
U. S. Army Field Artillery School
Fort Sill, OK

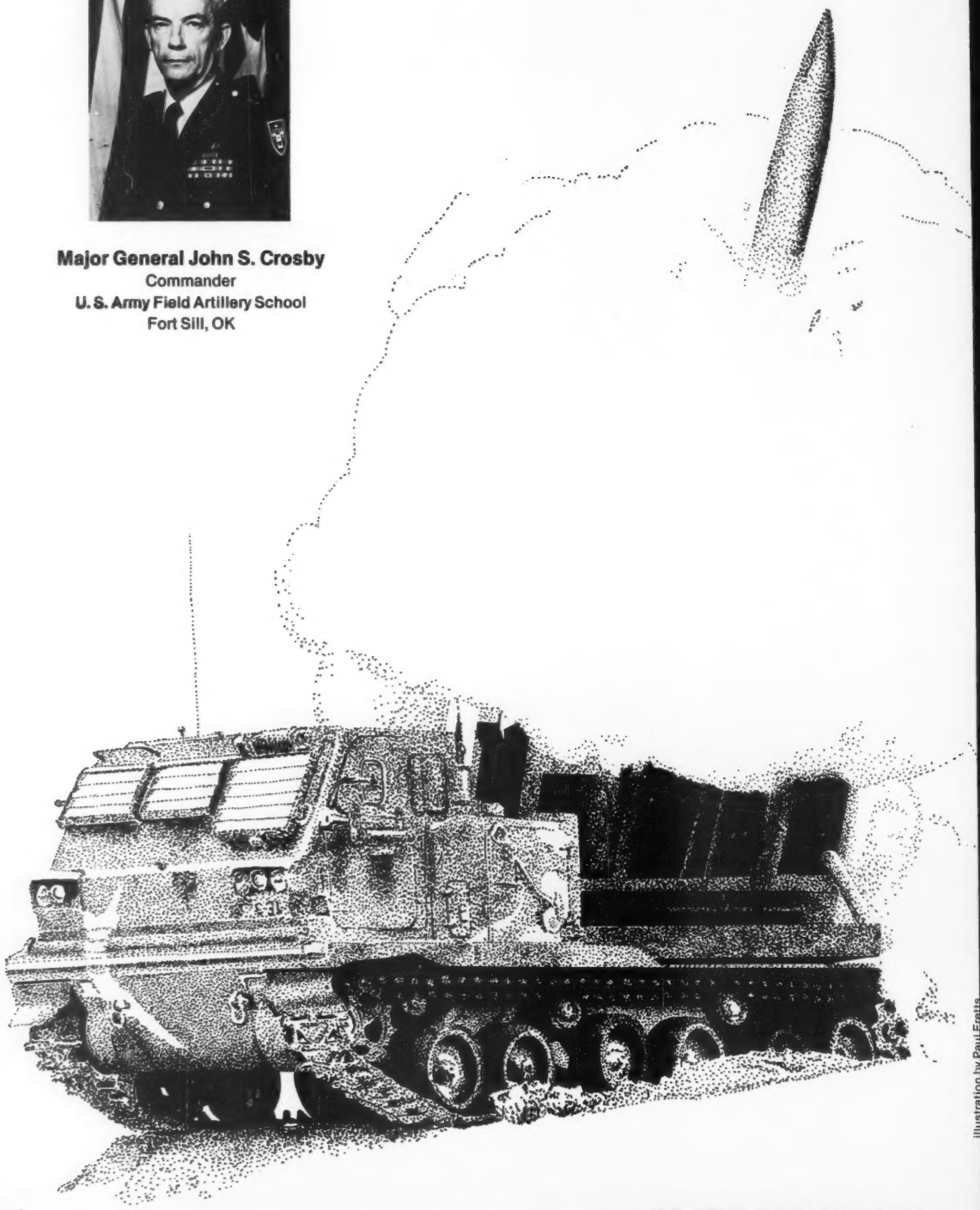


Illustration by Paul Frahs

Field Artillery and Army Aviation

Every Army aviator should see the Field Artillery as a professional branch he can count on, and every artilleryman should see the aviator as a maneuver soldier to be supported. Redlegs around the world welcome the newest maneuver arm and stand ready to provide it the very best in responsive fire support.

THE FIELD ARTILLERY stands ready to do its primary job— supporting the maneuver arms. As members of the combined arms team, those who are members of the Field Artillery take pride in their ability to provide accurate and timely cannon, rocket and missile fires to destroy the enemy and to integrate all fire support means during combined arms operations. This article deals with both of these aspects of the fire support business as it describes the combined arms integration of the Field Artillery and Army Aviation. In doing so it reviews appropriate organizations, doctrine and equipment.

The Field Artillery supports maneuver by providing fires from Field Artillery battalions and integrating other fire support such as mortars, close air support, battlefield air interdiction and offensive electronic warfare into combined arms operations. The essential element that plans, integrates and executes this fire support is the fire support section (FSS). A summary of these sections and the Aviation units they are located with is as shown in figure 1. A critical shortfall in the heavy and light division combat Aviation brigades (CABs) is the lack of designated radios and aircraft for use during execution of the operation. The Field Artillery School and

FIGURE 1

ARMOR AND MECHANIZED DIVISION FIRE SUPPORT PERSONNEL

UNIT	FS PERSONNEL	QTY
Combat Aviation Bde	CPT - FS Officer	1
	SFC - FS Sergeant	1
	SP4 - FS Specialist	1
Attack Helicopter Bn	CPT - FS Officer	1
	SFC - FS Sergeant	1
	SP4 - FS Specialist	1
Armored Cavalry Sq	CPT - FS Officer	1
	SFC - FS Sergeant	1
	SP4 - FS Specialist	2
Armored Cavalry Trp	LT - FIST Chief	1
	SFC - FS Sergeant	1
	SP4 - FS Specialist	2
INFANTRY DIVISION (LIGHT)		
Combat Aviation Bde	None	
Attack Helicopter Bn	None	
Recon Squadron Hq	None	
Recon Squadron Air Cavalry Trp	LT-FIST Chief	1
	SSG-FS Sergeant	1
	SP4-FS Specialist	2

Illustration by Paul Frelis

the Aviation School recognize this lack of equipment as a critical problem, and are working doctrinal answers for units to use and equipment answers for the future. Radios and radio nets are currently being added to the CAB for use by the FSS. At the same time fire support sections are being planned for the light division CAB.

The Close Support Study Group III (CSSG III), now completing its work, is a combined arms study convened at the Field Artillery School and supported by full-time representatives of the maneuver schools — Armor, Infantry and Aviation. The study group examined the overall fire support system and is recommending changes in the areas of doctrine, materiel, training and personnel. The lack of equipment for the heavy and light CAB, and the lack of fire support personnel in the light CAB are both addressed and the study should be approved in the immediate future.

Before describing the Field Artillery organizations in the divisions and corps, a brief explanation of the types of fires and fire support missions is appropriate. There are four types of fire that are provided by the Field Artillery:

- Close support fires.
- Counterfire.
- Interdiction fires.
- Other fires, including suppression of enemy air defense (SEAD).

A Field Artillery unit can provide any of these four types of fire. Moreover, a CAB could receive any of these fires based upon its scheme of maneuver and what is happening in the battle. The missions given to Field Artillery battalions are:

- Direct support (DS).
- Reinforcing.
- General support reinforcing (GSR).
- General support (GS).

The DS mission is the most responsive to the desires of the maneuver commander for any type of fire. Each of the four standard tactical missions has an established priority in which the Field Artillery battalion will answer requests for fire. The DS unit's first priority of response, for example, is to the supported maneuver unit. As one moves from the DS mission to the GS mission, the degree of responsiveness to any supported commander— Armor, Infantry or Aviation— lessens.

Thus the organization and missions assigned to a Field Artillery unit play a significant part in defining the relationship between Field Artillery and Army Aviation. In the heavy division each division artillery — a brigade level command — has four battalions of which three are organized to perform direct support and the fourth is organized for general support. The direct support battalions provide close support fires to committed maneuver brigades. The general support battalion is normally given the general support mission and delivers fires for the entire division. In the not too distant future this general support battalion will level the structure of the heavy divisions. Its 203 mm (8 inch) M110 cannons will go to the Field Artillery brigade at corps level.

The multiple launch rocket system (MLRS) battery now organic to the 203 mm general support battalions will, however, remain in the division artillery. The light division artillery has three direct support 105 mm, M102 battalions and a towed, general support 155 mm, M198 battery. The same relationship of close support fires to committed brigades and general support for the division as a whole that exists in the heavy division is mirrored in the light division. Figure 2 summarizes the division artillery structures.

Other significant players in the Field Artillery- Aviation mix of the combined arms team beyond the FSS, and the cannon and rocket systems noted above, are the Field Artillery aerial observers (FAAOs) found in artillery organizations. There are six aerial observers in the heavy division artilleries and none in the light division artillery. However, under projected changes to the tables of organization and equipment even the heavy division artillery has lost its organic Aviation section. This section is consolidated at the divisional CAB. Under this consolidation the FAAO has aircraft in the combat Aviation company which provides general support. Specifically, there are six OH-58 Kiowa aircraft available for the FAAOs.

There are also Aviation assets at corps level which are significant when one considers the Aviation-Artillery relationship. As figure 3 suggests, there are no differences in the FSS people found in the heavy and light corps. The sections plan, integrate and execute the fire sup-

FIGURE 2

ARMOR/MECH DIVISION ARTILLERY

CURRENT

UNIT	QTY	CALIBER	RANGE
Close Support Bn	3 Bn	155 mm, M109	24 km (RAP)*
General Support Bn	1 Bn	203 mm, M110	30 km (RAP)
		MLRS, M270	30 km

FUTURE

Close Support Bn	3 Bn	155 mm, M109	24 km (RAP)
General Support Btry	1 Btry	MLRS, M270	30 km

INFANTRY DIVISION (LIGHT)

Close Support Bn	3 Bn	105 mm, M102	11.5 km
General Support Btry	1 Btry	155 mm, M198	30 km (RAP)

*RAP — rocket assisted projectile

Multiple Launch Rocket System

photographs by Sam Orr

M110 203 mm howitzer

M109 155 mm howitzer

FIGURE 3

HEAVY AND LIGHT CORPS

UNIT	FSS PERSONNEL	QTY
Attack Helicopter Regt	MAJ - FS Officer	1
	SFC-FS Sergeant	
	SP4 - FS Specialist	1
Attack Helicopter Bn	CPT - FS Officer	1
	SFC - FS Sergeant	1
	SP4 - FS Specialist	1
Aerial Recon Squadron (Contingency Corps)	CPT - FS Officer	1
	SFC - FS Sergeant	1
	SP4 - FS Specialist	1

FIGURE 4

FIELD ARTILLERY WEAPONS

CALIBER	TYPE	RANGE
105 mm	M102	15.1 km (RAP) 11.5 KM (HE)*
155 mm	M109	23.5 km (RAP) 18.1 km (HE)
	M198	30 km (RAP) 18.1 km (HE)
203 mm	M110	30 km (RAP) 22.9 km (HE)
MLRS	M270	30 km (DPICM)**
Lance	M752	80 km (DPICM)

*HE — high explosive
**DPICM — dual purpose improved conventional munitions

port plan. FAAOs will be available in the Field Artillery brigades assigned at corps level, and like their division are provided aircraft support from the corps Aviation brigade.

The Field Artillery units at corps level provide fire support to the corps as a whole. Such Field Artillery brigades differ in composition based on the type corps—heavy or light—and the mission of the corps, but normally they consist of the 155 mm and 203 mm cannon battalions, MLRS battalions and Lance battalions. The exact number and type of these battalions is a function of the operational area and the corps' mission. Figure 4 summarizes the caliber and range of all the Field Artillery weapons that will be found in support of the combined arms team.

In addition to the organic fire support people in the Aviation units, there are also fire support people in the other corps, division, brigade, battalion and company-level maneuver units. Their function is to plan, integrate and execute the fire

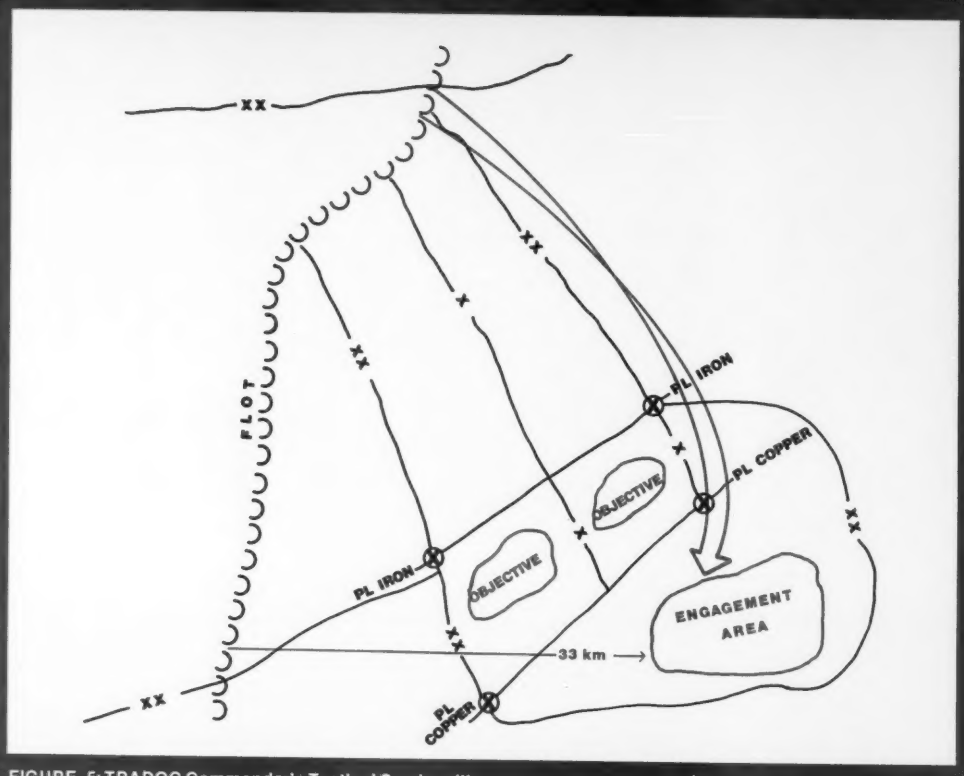


FIGURE 5: TRADOC Commander's Tactical Seminar III.

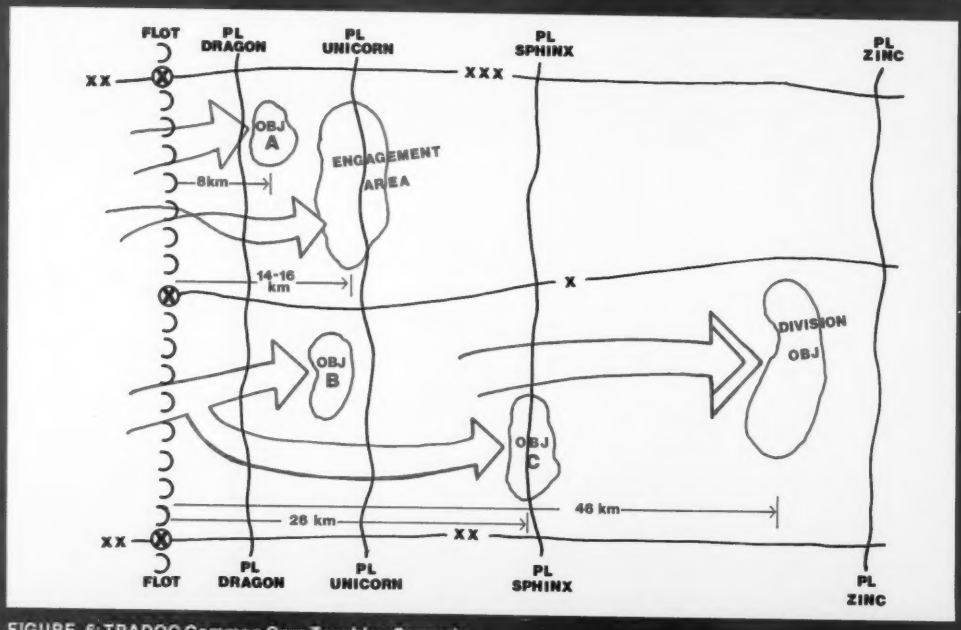


FIGURE 6: TRADOC Common Core Teaching Scenario.

support plan. Army Aviation units when teamed with other maneuver members can, therefore, expect the Field Artillery to be there. Under the supervision of the corps Artillery commander, the corps FSS recommends to the corps commander the allocation of fire support systems including Field Artillery to support corps and divisional units such as Armor, Infantry and Aviation brigades. As mentioned earlier, other fire support assets such as close air support, battlefield air interdiction and offensive electronic warfare are also allocated. To understand the process of allocation one must realize that the scheme of maneuver and the factors of mission, enemy, terrain, troops available and time (METT-T) are the most significant elements of the process. Using their understanding of the scheme of maneuver, METT-T and existing doctrine, the fire support coordinators (FSCOORDs) make their recommendations to the commanders. Commanders then decide how fire support will be allocated to their subordinate units.

What can a CAB commander and his aviators expect from the fires delivered by Field Artillery units? Based on the scheme of maneuver, the factors of METT-T and current Field Artillery doctrine, one close support battalion will be tasked to provide direct support to each committed maneuver brigade, including combat Aviation brigade. But looking at the divisional organization, we find only three close support Field Artillery battalions available to support four maneuver brigades, presuming all the brigades are committed simultaneously. Additional battalions of Artillery could be made available from the corps Field Artillery brigades if the corps commander so directs or other techniques can be exploited to provide mission support.

The corps or division commanders and their FSCOORDs will determine if the CAB will receive a DS battalion based upon the rational application of the Field Artillery's five fundamentals of organizing for combat:

- Provide adequate support for committed maneuver units.
- Weight the main attack in the offense; strengthen the most vulnerable area in the defense.
- Facilitate future operations.
- Ensure immediately available support for the commander to influence the battle.
- Achieve maximum feasible centralized control.

Using these fundamentals, the FSCOORD recommends an organization for combat that allocates the available assets and supports the scheme of maneuver. This process is best illustrated through two realistic scenarios.

The commander of the U. S. Army Training and Doctrine Command (TRADOC) and the school commandants used the first scenario in their discussion of AirLand Battle doctrine a year ago. This "battle story" focused on brigade-level operations against a threat force of a combined arms army consisting of five divisions—three in the first echelon and two in the second echelon. The friendly forces consisted of three divisions—two mechanized and one armor. The scenario started with two divisions—one armor and one mechanized—defending on line. As shown in figure 5, the third division was preparing to launch a counterattack through the northern shoulder of the corps and to attack the two second echelon tank divisions in the flank. The counterattacking mechanized division consisted of two mechanized, one armor and one combat Aviation brigades. The division assigned objectives to each of the ground maneuver brigades.

The CAB was given an engagement area (EA) within which it was to attack and destroy one of the second echelon tank divisions. Friendly Field Artillery was organized for combat to provide a DS battalion to each of the two attacking maneuver brigades; the other battalions were given GS and GSR missions in support of the division. The CAB did not receive a DS battalion because the EA was beyond the range of the cannon battalions. The CAB did, however, receive programed SEAD fires as it crossed the forward line of own troops (FLOT) en route to and from the engagement area. All Field Artillery battalions that can provide SEAD fires will be tasked to deliver those fires when elements of the CAB cross the FLOT. The distance that the CAB had to maneuver was the most significant factor that precluded the assignment of a DS battalion for the CAB. The corps' Lance battalion could, of course, have ranged the EA but the limited availability of Lance in the corps and its munitions effectiveness characteristics argued against use of the system. The Lance has a dual purpose, improved conventional munitions (DPICM) warhead which is not effective on heavily armored targets such as tanks.

Even though the CAB had no dedicated Field Artillery support in the engagement area, its FSS people still had a great deal of planning and coordinating to accomplish. They realized that crossing the FLOT was a critical point in the battle for the CAB. Therefore, the FSS people planned for the delivery of fires on known enemy air defense weapons to coincide with the helicopters transiting the area. The FSS also had to ensure that SEAD fires were delivered on opportunity targets as the opposing force's air defense artillery elements were located. This control of the delivery of fires and its coordination with the movement of transiting units made it essential that the FSO be in an aircraft near the FLOT. Since the FSO had no designated aircraft, he was totally reliant upon the CAB to provide him transportation. One acceptable solution to getting the FSO to the scene of the action is for the FSO to ride with the CAB commander in his

command and control aircraft; still he needs a dedicated radio to talk to supporting Field Artillery units. In this scenario the FSO during execution should remain near the FLOT to coordinate cross-FLOT SEAD fires. If the FSO is riding with the CAB commander in the EA, he has no coordination to accomplish since fire support is not available in the engagement area.

Other planning had to be accomplished regarding forward arming and refueling points. They had to be targeted by friendly Field Artillery units to allow for defensive, close support fires if they were attacked. The locations of brigade and battalion tactical operations centers must also be passed to the Field Artillery to allow for their inclusion in the distribution of protective fires.

The planning of fire support coordination measures also had to be achieved. Fire support coordination measures are used to protect friendly forces or to open the area for attack of enemy forces by friendly fire support means. The air axis of advance used by attack helicopter battalions can, for example, be made a restricted fire area (RFA) during transit times to preclude destroying friendly helicopters with Field Artillery fires. The old adage of "big sky-little bullet" may apply to high explosive (HE) rounds, but when DPICM is fired the patterns of dispersal could drop bomblets on the helicopter flying nap-of-earth. Considering the use of DPICM and its deployment characteristics, making the air axis of advance an RFA, which precludes firing of DPICM during transit times, would be an appropriate restrictive fire support coordination measure. The FSS must plan and disseminate such measures to all units prior to execution of the maneuver. During the execution of the operation, the FSO should be available in the area of operations to communicate with not only Field Artillery but also the CAB. Through him the Field Artillery can be kept abreast of the situation and remain on target.

In this scenario there was a great deal of fire support planning and coordination required to execute cross-FLOT operations but virtually no Field Artillery support provided in the EA. Nevertheless, the FSS remained the focal point for planning, coordinating and executing all fire support—battlefield air interdiction, close air support and offensive electronic warfare—that is available.

The TRADOC common teaching scenario provides a second example. In this scenario a five brigade division is attacking through another division. As shown in figure 6, the CAB in this fight has been given an engagement area in the northern part of the division zone. It has the mission of destroying an advancing tank regiment. The regiment could turn into the flank of the attacking brigades to the south. The engagement area is located from 14 to 16 km in front of the FLOT. It is, therefore, well within the range of the tubes of the division artillery and the Field Artillery brigades in the main battle area.

This situation necessitates an organization for combat that differs dramatically from the first example. In this instance the CAB might well receive a direct support battalion. One must recall the first fundamental of organizing Field Artillery for combat: to provide adequate support to committed maneuver units. In this scenario minimum adequate support would be a direct support battalion to each committed brigade. However, this fundamental is not the only factor that warrants consideration. The FSCOORD must also assess the impact of METT-T. After all, the CAB's mission in this scenario is not the main attack. The commander must weigh the total situation as based on the recommendation of his FSCOORD, decide whether or not to provide the preponderance of his Field Artillery to the brigades making the main attack in the south, or to assign one battalion with the mission of direct support of the Aviation brigade.

As an alternative, the division commander could decide to establish a "quick fire" channel for the CAB. The quick fire channel links the CAB directly with an available Field Artillery battalion so that calls for fire go directly to the battalion. If the battalion is not firing another mission, they will respond immediately. If this quick fire channel were not established, CAB requests for fire would have to go to a Field Artillery controlling headquarters— division artillery or Field Artillery brigade— for processing. The quick fire channel provides for quicker response to requests for fire from the CAB.

For better understanding of the potential synergistic effect of the Artillery-Aviation relationship, let's assume that the division artillery commander has given a 155 mm howitzer battalion a mission of direct support to the CAB. The CAB will, therefore, receive the entire assets of the battalion to assist in the flight in the engagement area. The DS battalion will provide SEAD fires not only along the FLOT but throughout the zone where the CAB will operate. In addition the DS battalion will fire the Field Artillery scatterable mines (RAAMs and ADAMs) to slow or halt the enemy, thereby making engagement by attack helicopters easier. The DS battalion will be immediately responsive to the CAB in executing any other needed fires, and the battalion commander of the DS battalion will come forward to move with the CAB commander as his FSCOORD. The DS battalion could also fire Copperhead, the Field Artillery's precision guided munition, into the engagement area if the AHIP (Army Helicopter Improvement Program) designates for Copperhead. These close support fires will substantially increase the combat power of the CAB and will contribute significantly to the destruction of the tank regiment. Once the destruction of the tank regiment is complete, the Aviation brigade and the artillery battalion

could be given another mission.

The delivery of fires is only a part of the overall plan. The CAB's FSS plans the fire support coordination measures to be used in the attack area. The use of an RFA over the air axis of advance and the engagement area would protect the helicopters. The FSO should be up in a helicopter to ensure the execution of the fire support plan is synchronized with the scheme of maneuver. The boundaries as shown restrict the Field Artillery from firing across the boundaries without coordination with the maneuver commander who owns the territory. Other maneuver graphics such as objective "goose eggs" and phase lines can be used to control the fires into the area where the CAB will operate.

The TRADOC Common Core Teaching Scenario demonstrates many facets of the complex relationship between Aviation and Field Artillery units. This scenario allows us to draw a mental picture of the scheme of maneuver and to speculate on how the Field Artillery might be integrated into the CAB's scheme of maneuver. Obviously, the FSS is a critical player. Its importance cannot be overstated if we are to fight as an effective combined arms team.

The Aviation Branch is the newest maneuver member of the combined arms team and, as such, organizations, equipment and doctrine must evolve to fulfill the potential of the Aviation-Artillery relationship. Every Army aviator should see the Field Artillery as a professional branch he can count on, and every artilleryman should see the aviator as a maneuver soldier to be supported. Redlegs around the world welcome the newest maneuver arm and stand ready to provide it the very best in responsive fire support. By working together, we can win on any future battlefied.

photo by Sam Orr

Lance Missile

Pershing II Missile

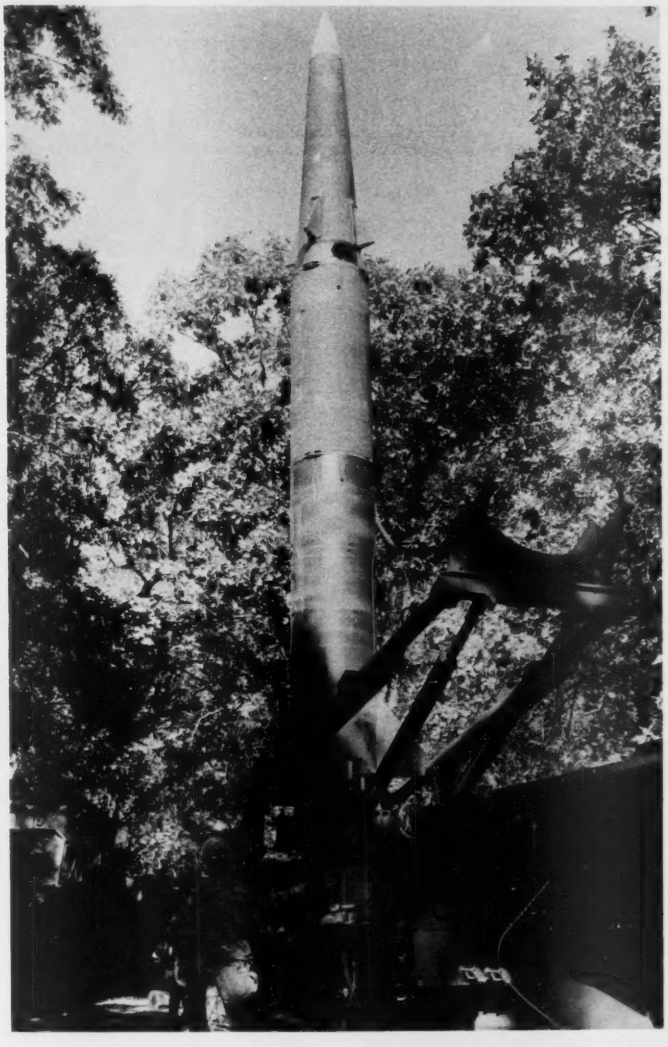
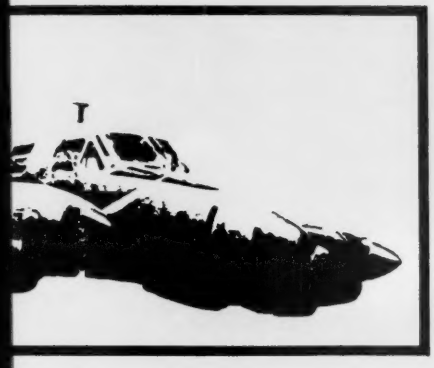


photo by SP4 Brian E. Padget

Aviation Safety Awards

U.S. ARMY SAFETY CENTER



THE HUMAN ERROR factor in **causing** aviation mishaps is well established and a matter of great concern to the Army's command leadership and safety people at all levels. The human factor in **preventing** aviation mishaps deserves the same kind of attention.

Aviation safety awards designed to recognize outstanding achievement in accident prevention are available for units and for individuals. These awards are intended to direct attention to organizations and people who have been successful in preventing damage and destruction of aircraft and injury or death to people.

Individual aviation safety awards

The Broken Wing Aviation Safety Award was established in June of 1967 at the Army Aviation Center. The award is designed to reward Army aircrews who, through outstanding airmanship, minimize or prevent aircraft damage or injury to personnel during an emergency situation.

Wide interest in the award led to a request by the Director of Army Aviation that the U.S. Army Board for Aviation Accident Research (now the Army Safety Center) study implementing this safety award worldwide. The result was that in September of 1968 U.S. Army military aircrews (officer and enlisted), Department of the Army civilians and contract personnel Army-wide became eligible to receive the Broken Wing.

The emergency for which the Broken Wing is awarded must not have been aggravated by self-induced factors and the aircrewmembers must have shown skill, knowledge, judgment and technique which led to recovery of the aircraft from the emergency. The aircraft must be one owned or leased by the Army at the time it is involved in the emergency.

Section IV, AR 672-74, specifies the information that must be included in nominations and describes the kind of emergency conditions which would be disqualifying for a Broken Wing award.

Nominations for the Broken Wing may be initiated by anyone who is aware of the outstanding performance of an aircrew in the emergency situation. Nominations are sent to the Commander of the U. S. Army Safety Center, ATTN: Chairperson, Broken Wing Safety Award Program, Fort Rucker, AL 36362-5363. Nominations are reviewed by the Broken Wing Award Committee whose members recommend approval or disapproval based on their judgment of whether the circumstances described meet the criteria for the award. The Commander, U.S. Army Safety Center, may accept or overrule the committee's recommendations.

In June of 1983, approval was given to include the Army Aviation Broken Wing Award in the recipient's permanent official military personnel file. Normally this is done by the installation personnel office, but documentation can also be forwarded to MILPERCEN by the person who received the award.

The kind of emergency situation that can occur without warning happened to CW3 Tholan F. Crosby in February of 1984. He was piloting a U-21G above overcast on an IFR clearance to South Bend, IN. When cleared to descend from 9,000 feet he found he could not retard number 2 throttle, it was frozen at 1,100 foot pounds. As the aircraft descended to 7,000 feet it entered overcast. The temperature from ground level upwards was below freezing.

The torque pressure and differential power continued to build.

Torque pressure reached 1,250 foot pounds and CW3 Crosby knew he would have to shut the engine down.

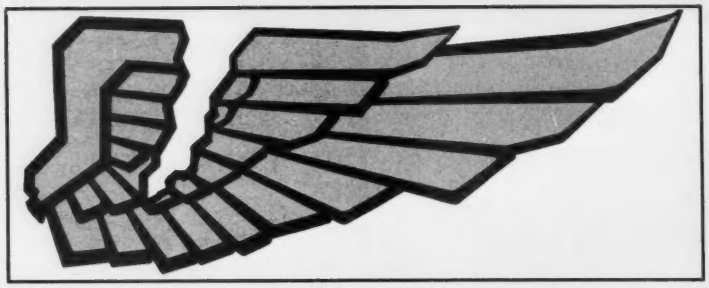
The aircraft broke out of the overcast at 3,500 feet MSL and CW3 Crosby shut the engine down at 3,000 feet. The runway was covered with packed snow and ice and there was a 50 degree right cross wind of 20 knots. The aircraft's landing weight was 8,301 pounds.

Landing an aircraft under such conditions, even with both engines operating, would have taken skill. With the right engine shut down, a strong cross wind from the right and the poor braking surface on the runway, an accident could have easily resulted. CW3 Crosby brought the aircraft down safely with no damage and no injuries to the crew or the five passengers aboard. He received the Broken Wing award.

CW2 Connie M. Norwood became the first female Army aviator to receive a Broken Wing when the UH-1H she was copiloting responded to an urgent medevac call and then became involved in an emergency of its own.

A medical team had to be picked up at a hospital in Baltimore and taken to Cumberland, MD, where they were to pick up a severely burned patient and return to the Baltimore hospital. Weather conditions, which had been marginally VFR, worsened while the patient was being prepared for transfer.

It was now dark and CW4 David McAdams, the instructor pilot, filed IFR. On the return trip, as they neared the hospital with the medical team and patient on board, a letdown to VFR was made and an approach to the pad was completed. The aircraft was positioned for landing but as the pilot lowered the collective to the full down position after touchdown, a loud report was heard from the right front of the aircraft. The aircraft began to settle in an unusual attitude and roll to the right. CW4 McAdams applied collective and stabilized the aircraft in a level attitude, holding it light on the skids. Inspection by the crewchief showed the forward cross tube was completely severed at the right cross tube mount.



CW4 McAdams held the aircraft in a stable position until the medical team and patient could be taken off. He then turned it over to CW2 Norwood and got out of the aircraft to look at the damage himself.

He saw that the aircraft could not land and it would run out of fuel before a maintenance recovery team from an Army airfield could reach the hospital helipad with needed equipment. He knew that when the fuel was exhausted, the aircraft's full weight on the landing gear would cause it to collapse and would roll the aircraft to the right. The Huey would probably be destroyed and there was a chance crewmembers would be injured or even killed.

CW4 McAdams decided to return to Davison Army Airfield, but first he and the crewchief secured the damaged cross tube and skid assembly to the aircraft by using litter straps.

During the half hour or so this took, CW2 Norwood, without any other pilot assistance, maintained the aircraft in a stable position, light on the aft part of the skids. It was night and the weather conditions were rainy with variable winds.

With CW4 McAdams once again at the controls, the aircraft was flown to Davison (at reduced airspeed and avoiding populated areas in the event the landing gear assembly should separate from the aircraft). CW4 McAdams made a successful landing, positioning the damaged aircraft onto jacks. There was no further damage and no injuries to the crew. Broken Wing awards were approved for both aviators.

These are only two instances of the kind of good judgment and flying skill that can save an aircraft, its passengers and crewmembers when an emergency happens. Thirty-nine aviators were awarded the Broken Wing in 1982. In 1983, there were 49 awards and in 1984, 29 awards were presented.

Unit awards for Army Aviation mishap prevention

The following awards are authorized for Active Army, National Guard and Army Reserve units or organizations which have aviation personnel or aircraft assigned by tables of organization and equipment (TO&E) or tables of distribution and allowances (TDA) that are engaged in Army flying operations. Mishaps for the purpose of these awards means class A, B and C.

The **Award of Merit** will be presented to units or organizations that have completed **12** consecutive months of flying without a mishap. (The Award of Merit is a step toward earning the Award of Honor.)

The **Award of Honor** will be presented to units or organizations that have completed **24** consecutive months of flying without a mishap.

The **Award of Excellence** will be presented to units or organizations that have completed **36** consecutive months of flying without a mishap.

Commanders of aviation units meeting the prerequisites in Section III, AR 672-74, should submit nominations and requests for validation and issuance of awards through normal command channels to Commander, U.S. Army Safety Center, ATTN: PESC-PR, Fort Rucker, AL 36362-5363. Unit safety records will be validated using information in the Safety Center's data bank.

If during this validation process, a mishap is identified as occurring during the time period the nomination covers, **all** of the circumstances will be considered. In some circumstances a unit which has had a mishap can still qualify for an award.

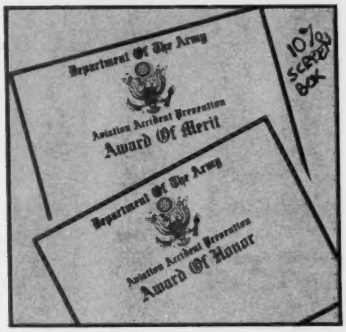
For example, if the mishap was caused by a so-called "act of God," for instance a lightning strike, the unit may still qualify for an award. The lightning strike may have done enough damage to warrant a class C mishap for rate purposes but if the pilot managed to land the aircraft without causing further damage, this kind of mishap would not prevent the unit from receiving the award. The same kind of rationale applies to mishaps caused by manufacturing defects.

If the mishap was caused by personnel of a unit operating or maintaining the aircraft (not the one on whose TO&E or TDA it appears) then the owning unit is not precluded from an award because of that mishap.

If the nomination is disapproved because of a mishap and there is disagreement with the ruling, it may be returned for reconsideration. The Commander of the Army Safety Center will personally review the case and make the final decision. Approved awards are sent through command channels for presentation.

Unit safety awards approved in each category for the past 3 years are:

	1982	1983	1984
Award of Merit	273	336	24
Award of Honor	142	182	21
Award of Excellence	177	182	14



Awards of Excellence approved for major components during these years are:

	1982	1983	1984
Active Army	76	57	6
USAR	39	41	0
ARNG	62	84	8

It should be remembered that these figures only represent the number of awards. They should not be interpreted as reflecting any kind of trend. Units do not always request awards when they become eligible, therefore, an award may have been approved in one of these years when it was actually earned sometime before that. Another factor bearing on the numbers shown is that the qualifying period for Awards of Excellence changed in June of 1982 from 6 years to 3 years. (The period for Awards of Honor also changed from 3 years to 2 years.)

When a unit is nominated for an award, it is very important that the information submitted is complete. For example, the Safety Center cannot process an award without the correct unit identification code (UIC). Maintenance of accurate records in the unit is important so that the correct period of time is shown on the nomination. In addition, a point of contact and telephone number where that person may be reached should be furnished so that if there are questions to be resolved, it can be done quickly.

Questions about awards should be directed to Directorate for Plans, Operations and Programs, U.S. Army Safety Center, AV 558-2947/6510, FTS 533-2947/6510, or commercial (205) 255-2947/6510.

Just as the human factor in causing aviation mishaps is one of the most difficult to correctly identify and change—the human factor in preventing accidents is also difficult to identify and duplicate. Why do aviators with similar backgrounds and experience react in such different ways to emergencies? Why does one show good judgment and make decisions backed up with skill and save an aircraft while the other reacts in a way that contributes to the emergency and perhaps costs not only an aircraft but possibly the lives of everyone on board? The answers to those questions could have a lot to do with preventing accidents in the future.

When you see the silver lapel pin which represents the Broken Wing award or a safety award displayed in an aviation unit, think about what they really mean. Without this kind of safety effort and the kind of aviator skills that earned these awards, Army Aviation accident statistics would be much higher and those aren't just numbers—they are aircraft and people and they just might be the difference in winning or losing the next battle.

Assessing Aviation Branch Courses

IMPLEMENTATION OF the Aviation Branch on 12 April 1983, has given rise to new challenges, one of which is training and developing our own commissioned officer corps. While the long lineage of tradition and professional development philosophy of other branches influenced the development of the Aviation Officer Basic (AVNOBC) and Advanced (AVNOAC) Courses, the requirement remains to establish methodology to accurately assess the effectiveness of these courses.

The Directorate of Evaluation and Standardization (DES) was directed by the deputy assistant commandant, U.S. Army Aviation Center, in July 1984 to develop a long-range program that would assess the completeness and usefulness of the subject elements offered in AVNOBC and AVNOAC. Although the tasking provided a general direction, there were still significant implications in the scope that would have to be further defined and would require external assistance to accomplish. The Army Research Institute (ARI) was tasked to provide assistance in scientific methodology and statistical analysis. Reserach was conducted by ARI and DES between July and October to further define the scope of the tasking and to explore various methodology alternatives for a survey structure and the development of a data base. To formalize the working relationship, a Letter of Agreement was established between DES and ARI in October 1984. An assessment plan and an implementation program were developed based on the instructional content of the courses. These were designed to determine the courses' ability to develop a fully effective officer corps for the Aviation Branch. Additionally, a joint work group (JWG) with representatives from the Directorate of Training and Doctrine and the Department of Combined Arms Tactics was established to assist ARI in developing survey questionnaires to be used in the evaluation effort. The JWG will provide input to the survey to maintain continuity with the course developers' information requirements.

The post-course survey is designed to evaluate the adequacy of the curriculum and the quality of AVNOBC and AVNOAC instruction. The analysis of survey data will provide the Aviation Center reliable information to assess the training philosophy and instructional strategy over a long term as well as provide timely feedback to the training departments from the field. Additionally, the survey will be used to develop an extensive data base on the officer development process of Specialty Code 15 over a 5- to 9-year period. The goal is to produce a picture of how well the training develops officer attributes of personal and professional responsibility which are deemed essential for leadershp growth. This program is not intended in any way to measure an officer's ability to fly. Test groups will be selected from the lieutenants beginning AVNOBC in January 1985. Officers identified for these test groups will be tracked and surveyed throughout their careers to the rank of major and their selection for Command and General Staff College. Additionally, surveys will be directed to officers of subsequent classes on a random basis to ensure the data collected maintains the broadest base possible. Officers attending AVNOAC will be surveyed in the same manner.

Initial survey activity will be directed to Aviation brigade and battalion commanders. These surveys are designed to solicit the commanders' expectations of course graduates and their perceptions of the curriculum content of AVNOBC and AVNOAC before the graduates begin to arrive at their units. Subsequent surveys will focus on actual adequacy and quality of officer preparation (not on individual performance) from the time the officer arrives at the unit. The initial survey will provide information to establish a comparative data base for future analysis.

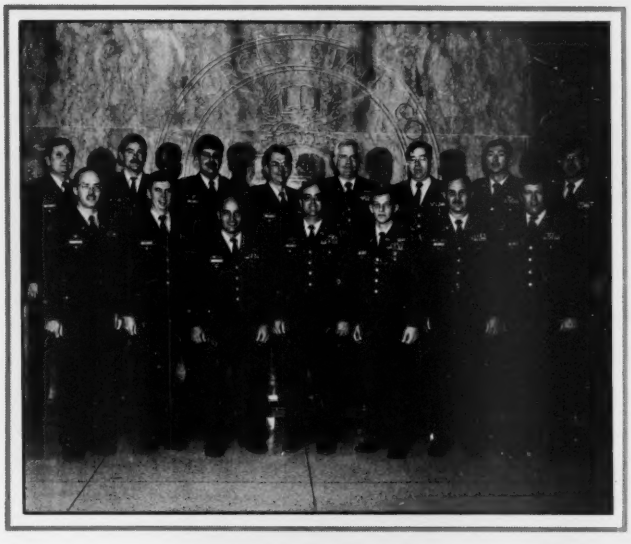
The post-course survey will chart and document the development of the Aviation Branch's new leadership. It will be incumbent on the officers selected to particpate in the survey program to approach their responsibility

with diligence and honesty. Feedback provided by this program to the course developers and managers is an essential element to ensure that the professional development of Aviation officers keeps pace with the rapid evolution of the Aviation Branch and the leadership responsibilities of the AirLand Battle.

DES welcomes your inquiries and requests to focus attention on an area of major importance. Write to us at: Commander, U.S. Army Aviation Center, ATTN: ATZQ-ES, Ft. Rucker, AL 36362-5000; or call us at AUTOVON 558-3504, FTS 533-3504 or Commercial 205-255-3504. After duty hours call Ft. Rucker Hotline, AUTOVON 558-6487 or 205-255-6487 and leave a message.

Congratulations!

These Army aviators are graduates of the Armed Forces Staff College (Class 74) at Norfolk, VA. They are: Front row (left to right) Major (P) Joseph R. Nowland, Major (P) Thomas D. Rains, Major (P) Melson J. Kahue, Major Thomas R. Elliott Jr., Major Thomas M. Horner, Major (P) Curtis J. Grant, Major (P) Roger D. Hill. Back row (left to right) Major Wayne L. Dandridge, Major (P) Robert M. Lee Jr., Major William J. Paini, Major (P) Edward H. Grazier, Major (P) Emory N. Deason Jr., Major (P) Lawrence L. Derks Jr., Major (P) John V. Wemlinger, Major (P) Carl B. Marshall (faculty member).



AVIATION PERSONNEL NOTES

Aviation Career Incentive Pay

NOT A DAY goes by here at the Military Personnel Center that we don't receive at least a dozen phone calls regarding entitlements to Aviation Career Incentive Pay (ACIP)—especially when it concerns the 18th year of Aviation service and beyond as this entitlement is then based on both Total Operational Flying Duty Credit (TOFDC) and an officer's total federal officer service (TFOS) time. Hopefully this article will clear up some of the questions most frequently asked.

Several articles have been published in the *Aviation Digest* to assist aviators in sorting through the various regulations and management tools to determine personal eligibility for ACIP. One portion of a document which best describes entitlement to ACIP is part 2, chapter 1, section B, "DOD Military Pay and Allowances Entitlements Manual (DODPM)." A working knowledge of this manual is valuable to each aviator and a copy can be read at local finance and accounting offices or reference libraries. The first step in determining your status and eligibility for ACIP is to define the following terms:

Qualified for Aviation Service: To be qualified for Aviation service, an officer must have an Aviation specialty (15 or 67J) or military occupational specialty (MOS) (100A-R) and possess a Pilot Status Code 1 on the Officer Record Brief.

Aviation Service Entry Date (ASED):

Commissioned Officer: This is the effective date an officer was placed on student or aviator flying status by competent orders.

Warrant Officer: This is the date a warrant officer received his or her appointment for completion of flight school. If the individual was a warrant officer when he or she entered flight school, ASED is as outlined for commissioned officers.

Total Federal Officer Service: TFOS is the total of all commissioned and warrant officer active and inactive service creditable for basic pay. The TFOS date is the date from which an aviator's years of federal officer service is computed. It is used to determine incentive pay rates for commissioned officer aviators with more than 18 years officer service. TFOS is also used to compute the 22- or 25-year termination date of ACIP for commissioned officer aviators who have "passed" the 18-year Aviation Career Incentive Act (ACIA) "gate."

Aviation "Gates": The two points (12th and 18th year computed from the ASED) in an officer's Aviation service used to determine whether further entitlement to ACIP will be continuous or monthly.

Total Operational Flying Duty Credit: This is the cumulative number of months an aviator is assigned to an operational position. It does *not* include proficiency or nonoperational flying duty positions. Operational flying duty is defined as flying performed by officers, whether in training that leads to the award of an aeronautical rating, or under competent orders while serving in assignments in which basic flying skills normally are maintained in the performance of assigned duties.

Entitlement to ACIP: Officers qualified for Aviation service—to include a current class II flight physical, and possession of an Aviation specialty code (or MOS)—are entitled to ACIP either on a continuous or a monthly basis. Entitlement to continuous ACIP is limited to members of the Aviation Branch or Medical Service Corps 67J officers.

An aviator's entitlement to continuous ACIP starts when the officer enters flight training or when appointed an officer, whichever is later (as in the case of a warrant officer candidate appointed warrant officer upon graduation). Entitlement to continuous ACIP will then continue without interruption—if otherwise qualified—until the 12th year of Aviation service. At this point, an aviator with 72 months TOFDC is entitled to continuous ACIP until the 18th year of Aviation service.

Example: Aviator Alpha has an established ASED of 711127 and when his 12-year "gate" arrived on 831127, he had 80 months TOFDC which entitled him to continuous ACIP to the 18th anniversary of his ASED (891127). Alpha's TFOS date is 701024; therefore, his continuous ACIP will decrease from $400 per month to $370 per month when he completes 18 years TFOS (881024).

Those with 108 months TOFDC by the 18th year of Aviation service have continuous entitlement to 22 years of officer (*not* Aviation) service, but the monthly pay decreases by $30 every 2 years after the 18-year date.

Example: Aviator Bravo has an ASED of 661024 and when his 18-year "gate" arrived on 841024, he had accrued 108 months TOFDC which entitles him to continuous ACIP up to the 22d anniversary of his *TFOS* date (651024). His continuous entitlement to ACIP will stop at 2400 hours on 871023.

Those aviators with 132 months TOFDC by the 18th year of Aviation service are entitled ACIP up to 25 years of officer service; however, the monthly pay decreases by $30 every 2 years after the 18-year date.

Example: Aviator Charlie has an ASED of 661024 and when his 18-year "gate" arrived on 841024, he had accrued 132 months TOFDC which entitles him continuous ACIP up to the 25th anniversary of his *TFOS* date (651024). His entitlement to continuous ACIP will stop at 2400 hours on 901023.

Officers qualified for Aviation service who are not entitled to continuous ACIP as outlined above, are entitled to monthly ACIP if the aviator is assigned to an operational flying duty position and has met the minimum flight requirements outlined in the DODPM. Monthly ACIP is handled locally between the aviator's commander and the servicing finance and accounting officer (FAO). Many FAOs have neglected to stop monthly ACIP when the aviator departed the station and collection action has, in some cases, resulted in the collection of thousands of dollars from the aviator. Aviators being paid monthly ACIP should take the initiative to stop monthly ACIP when they depart their operational position.

The Uniformed Services Pay Act of 1981 changed the ACIA to entitle commissioned officers below the grade of brigadier general, with more than 25 years TFOS, to receive $250 per month ACIP. These officers must be qualified for Aviation service and must be required, by competent orders, to perform operational flying duties. They must also maintain the minimum flight requirements outlined in DODPM.

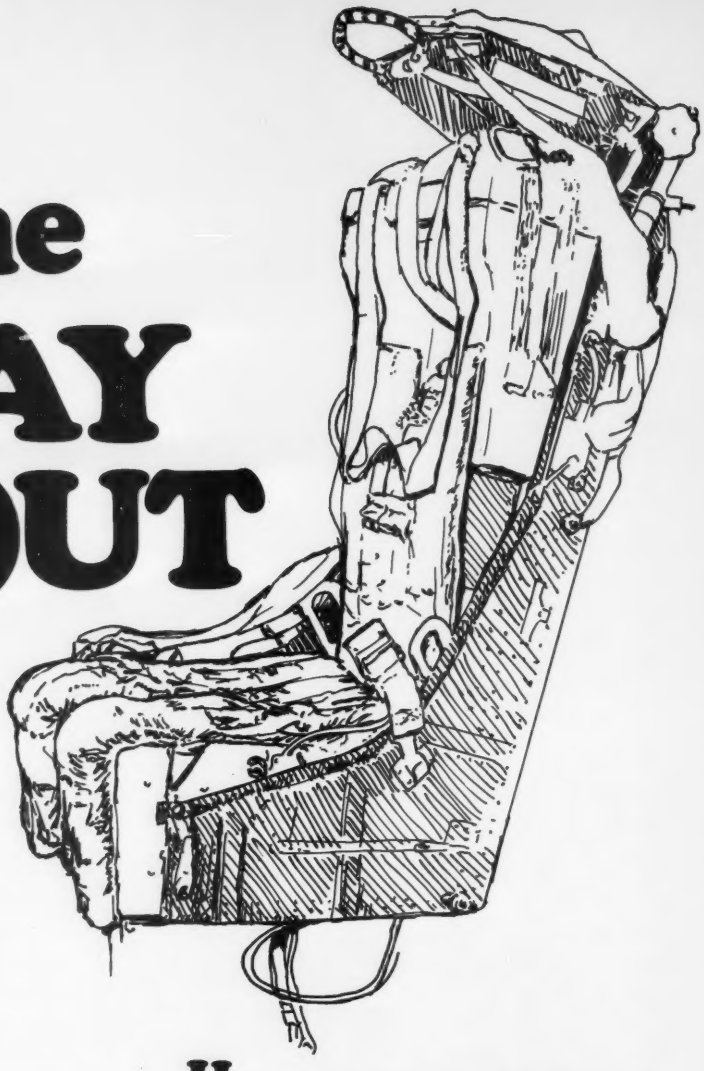
Hopefully this article has familiarized you, the individual aviator, with your entitlements to Aviation Career Incentive Pay. Any aviator having questions about related problems is encouraged to contact Mr. Austin Peace at AUTOVON 221-8156/8157 or may write to:

Commander
U. S. Army Military Personnel Center
ATTN: DAPC-OPA-V
200 Stovall Street
Alexandria, VA 22332-0400

Happy Flying!

AVIATION LOGISTICS

The WAY OUT



Sergeant First Class Larry R. Patrick
Chief, Utility/Cargo Airplane Branch
Department of Aviation Systems Training
U.S. Army Aviation Logistics School
Fort Eustis, VA

HERE IS AN interesting thought for OV-1 Mohawk aircrews. You have had a perfectly routine flight. Nothing out of the ordinary has happened. Suddenly, your aircraft is experiencing difficulties and it is obvious that the situation is rapidly deteriorating. You determine that it is impossible to save the aircraft. Now it's time to save yourself. You reach for the firing handle on your ejection seat. As you pull the handle, you think, "Will it work?"

The Martin-Baker J5D ejection seat is a unique item of safety equipment. The only Army aircraft that uses this system is the OV-1 Mohawk. The ejection seat is an emergency egress system designed to eject the

crewmember clear of the aircraft during emergency situations. The ejection seat provides safe escape at all altitudes and speeds (above 60 knots) within the Mohawk's performance envelope. To eject, the crewmember pulls either the face curtain or the firing handle on the leading edge of the seat bucket. If time permits, the hatch may be jettisoned first; otherwise, ejection is through the overhead hatch.

The seat is propelled from the aircraft by one primary and two secondary explosive charges. As the seat exits the aircraft, five separate events are initiated:

- The drogue gun sear is pulled from the gun by a trip rod attached to the ejection gun crossbeam.
- The time release mechanism sear is pulled from the mechanism by a trip rod which is also attached to the ejection gun crossbeam.
- Dual leg restraint cords tighten, pulling the seat occupant's legs aft and together against the seat bucket to prevent injury as the ejection seat leaves the aircraft.
- The emergency oxygen system is activated, whether needed or not.
- The tip-off compensating rocket fires after the seat has risen to within 9 inches of full ejection gun extension.

The tip-off compensating rocket positions the ejection seat in the correct attitude for rapid unrestricted deployment of the drogue parachute and increases seat trajectory height. After ejection, the main parachute, stowed on the seat behind the occupant's shoulders, is automatically deployed and separates the occupant from the seat.

If ejection occurs above 15,500 feet, the barostat on the time release mechanism delays seat/occupant separation and deployment of the parachute until the seat and occupant descend below 15,500 feet. If seat and occupant separation fails to occur automatically, the seat has a manual override system incorporated. Lifting the manual override handle up and aft releases the rigid seat survival kit assembly, shoulder harness loop strap, and leg restraint cords from the seat. The guillotine on the left side verticle beam cuts the drogue line and frees the personnel parachute from the drogue parachute. This allows the occupant to roll forward and push away from the seat and manually deploy the personnel parachute.

The ejection seat is a critical piece of equipment that requires very exact maintenance procedures. All components of the seat must function correctly to assure its life-saving ability. Ejection seat maintenance is performed by personnel holding the 67H military occupational specialty (MOS) with an additional skill identifier (ASI) B7. Personnel holding the B7 identifier are the only mechanics that are qualified to perform ejection seat maintenance. The B7 identifier is obtained by attending the Martin-Baker J5D Ejection Seat Repairer Course (600-ASI-B7) taught at the U. S. Army Aviation Logistics School, Ft. Eustis, VA.

Training teams from this organization have encountered severe deficiencies in ejection seat maintenance at units that have been visited. The deficiencies were of a nature that would have resulted in a malfunction if an ejection had been attempted. The problems encounterd were directly attributable to having unqualified personnel performing ejection seat maintenance.

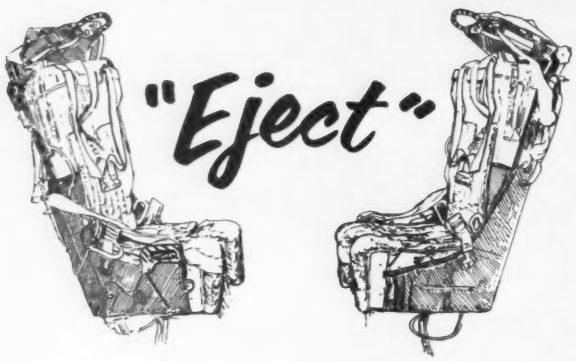
Ejection seat maintenance problems can be avoided. Ensure that the personnel performing your maintenance are qualified. The ASI B7 course is taught for just that purpose. Since fiscal year 1984 began, only eight people have attended the ASI B7 course. The training is available and should be used. Those eligible are soldiers holding primary MOS 67H who are assigned to or on orders to an OV-1 Mohawk assignment. Submit your service school request through your major Army command in accordance with procedure 3-10 of DA Pamphlet 600-8. Point of contact at Military Personnel Center (MILPERCEN) is SSG Gary May or SP5 Austin Mack at AUTOVON 221-7339/8373 or write MILPERCEN, ATTN: DAPC-EPT-F, 2461 Eisenhower Ave., Alexandria, VA 22331.

Get your people qualified! Then you won't have to think, "Will it work?"

OV-1 MOHAWK

We all know and appreciate the importance of verbal communications in our daily lives. Recently, I had an experience which will convince even the most ardent doubter of the importance of verbal communications.

"Eject"



CW4 Carl H. Spriegel
Company A Aviation Safety Officer
15th Military Intelligence Battalion
504th Military Intelligence Group
Fort Hood, TX

I WAS TASKED to ferry an OV-ID Mohawk from Stuart, FL, to Seoul Air Base, in the Republic of Korea. My "right seater" for the trip experienced his first flight in the aircraft during the acceptance flight at the Grumman Aerospace Plant in Florida. He received extensive ground training on the MK-J5D Martin Baker ejection seat prior to his first flight and a thorough review prior to our departure for Seoul. He was more than mildly concerned, as most people are when first flying in an aircraft equipped with ejection seats. His concern was reinforced each time we arrived at that point in the checklist where I stated, "Ejection seats armed." But as the days passed and his confidence in the system progressed, his concerns waned.

Prior to departing Karachi International Airport, Pakistan, we reviewed ejection procedures to be used in the event of an emergency. As always during the preflight briefing, I pointed out that if a condition should arise requiring an ejection, I would say "eject" one time and if he hesitated, he might find himself alone in the aircraft.

Within 1 minute after takeoff from Karachi, we experienced an engine failure at a critical airspeed and altitude. While I attempted to maintain control of the aircraft and find a suitable heading for ejection, I told him, "We have had an engine failure!"

He immediately tightened his lapbelt. As airspeed and altitude decayed, I told him to "eject!"

When he failed to react, I yelled, "eject!"

The second time he heard me, both over the intercom and from the sound of my voice reverberating off the cockpit canopy. He immediately assumed proper ejection position and pulled the lower firing handle. With a loud bang and stream of fire, he left the aircraft.

With his successful ejection completed, it was now my turn. The airspeed was approaching stall speed and the aircraft was passing 100 feet AGL (above ground level), so I aimed the Mohawk toward an open area and pulled the lower firing handle. Moments later the aircraft disappeared in a ball of fire just 200 meters ahead.

The aircraft was totally destroyed, but we both ejected safely and returned to earth without injury.

I've had time to reflect on these events and have drawn a number of conclusions:

First—clear, concise communications are an absolute necessity. They enabled my right seater to snug his seatbelt and eject in a timely manner. His apparent inability to hear or understand my first command to eject could have been disastrous for us both.

Second—repeated drilling of emergency procedures before each leg of the flight guaranteed his safe and speedy ejection when the actual emergency occurred.

Third—despite my notions to the contrary, I found myself subordinating my own safety during the emergency to the safety of my right seater. I don't believe this had anything to do with heroics, but rather was related to the condition of the aircraft and its flight profile. As long as the aircraft was under control and the altitude and airspeed were adequate, I felt I had the time and responsibility to assure that my right seater had ejected safely. I'm sure my failure to communicate with my right seater the first time also caused me to stay with the aircraft until he departed.

When we first met on the ground after the ejection and hugged each other, all I could say was, "Thank God you left when you did!"

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PEARL'S: Firestarter, Aviation Survival, Magnesium; Inertia Reel Assembly; Screw-In Flares; PRC-90 Survival Radios

OCTOBER

PEARL'S: Optional Conversion Of Survival Kit; Installation Of AN/PRC-90 Radio Pocket

Hangar Talk: ALSE—AR 95-17 And FM 1-302

NOVEMBER

The Army Microwave Landing System

PEARL'S: OV-1 Survival Vest

THREAT: Soviet Helicopter Armament

Materiel continued

DECEMBER

PEARL'S: SRU-21/P Survival Vest; Packing Problem With Survival Kit (Cold Climate); Suspension System For Aviation Use Wearing the AN/PVS-5 Night Vision Goggles; More Sizes Of Nomex Flyer's Coveralls

Views From Readers: Tool Suggestions

Training and Training Development

JANUARY

Aviation Training For the Future

New Correspondence Course: Rotary Wing Aviation Refresher Course

Views From Readers: Comments On The Use Of Flight Simulators

Aeroscout Observers Need Better Training

FEBRUARY

Creating The Aviation Officer Basic Course

PEARL'S: ALSE School

MARCH

Training The Aviation Warrant And Commissioned Officers

Training The Army Aviator—Why Can't It Be Fun?

APRIL

Warrant Officer Candidate Military Development Course

The Aviation Officer Basic Course

DES Report To The Field: A Look Back

MAY

DES Report To The Field: The New ATM

The Officer/Warrant Officer Rotary Wing Aviator Course

JUNE

Aviation Warrant Officer Advanced Course

Aviation Officer Advanced Course

Summer Training Exercises

Aviation Doctrine and Training Literature

Oil Analysis Video Training Tapes Available

1984 Annual Writ

Views From Readers: The Army Modernization Program

JULY

ATC Action Line: Lights Out Night Vision Goggles Training

Warrant Officer Senior Course

Aviation Pre-Command Course

DES Report To The Field: Branch Training Team And Aviation Standardization And Training Seminar

AUGUST

Maintenance Test Flight Evaluators

Brigade Airspace Management, Part IV: Training

PEARL'S: DARCOM/Fifth Army ALSE School

Team Spirit 84: An Army Aviation Overview

Profile of Army Aviation In Korea

View From The Eagle's Nest

SEPTEMBER

DES Report To The Field: Night Vision Goggles Training and Operations

Fit To Fight

Dustoff Does It Better

45th Transportation Company Keeps 'Em Flying

OCTOBER

First ACE Meeting

Views From Readers: Request for Aviation Course Articles; Aeroscout Observers Need Better Training

NOVEMBER

Missed Approach Point to Safe Landing

Views From Readers: Camouflaged 5,000 Gallon Tankers And FARE Systems

PEARL'S: Aviation Life Support Specialist Course (ASI 02) FY 85 Class Schedule

Air Force Air Ground Operations School

DECEMBER

Aviation Center Training Expansion

First Aeroscout Enlisted Graduates

First Aviation Officer Advanced Course

Aviation Personnel Notes: Volunteer for Airborne Training

Views: From Readers: FM 24-1 thru FM 25-4 (Training)

Flight Medic Training Program

Accident Prevention And Safety

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The Stressed Aviator

PEARL'S: Hazards of Nonsafety Matches

Safety In The Air—And On The Ground

Views From Readers: Requested Info On Loss Of Tail Rotor Control

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Alcohol And The Aviator

PEARL'S: First Aid For The Eyes

ATC Action Line: Be A Team Player

MARCH

The Human Factor In Aviation Mishaps

DES Report To The Field: Wind Sense

ATC Action Line: Fly Neighborly

APRIL

Aviation Personnel Notes: New Flying Evaluation Board Procedures

Aftermath

Spring Could Be Your Kiss Of Death

ATC Action Line: Vertical Helicopter (IFR) Recovery Procedures (VHIRP)

MAY

Watch The Birdie

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DES Report To The Field: Vmc: You Can't Live With It, So Why Die With It?

PEARL'S: Crash Firefighting

Emergency Procedures

ATC Action Line: New Flight Plans

JULY

Emergency at 36,000 Feet

AUGUST

DES Report To The Field: Crewrest?

What The Ear Hears

ATC Action Line: Obstacle Clearance During Departure

SEPTEMBER

The UASSB—Watchdog for USAREUR Aviation

Wind Shear Can Be Sheer Terror

OH-58 Loss Of Tail Rotor Effectiveness; Why It Occurs

ATC Action Line: Pass The Weather Word

OCTOBER

Ice . . . Major Hazard To Winter Flying

NOVEMBER

DES Report To The Field: Aircrew Mission Briefing Requirements

ATC Action Line: National Airspace System Plan

DECEMBER

Flight Into Instrument Meteorological Conditions

DES Report To The Field: A Good Safety Record Is No Accident

Be Prepared

Operations

JANUARY

Aviation Employment Conference

Night Vision Goggles Combat Effectiveness

DES Report To The Field: Timeliness In Army Aviation

Views From Readers: Response to Army Aviation Avionics

The AirLand Battle: A Winning Combination

Air-To-Air: Pigs And Rice In The OK Corral

MAXFLY: Sample Data Collection Proves Itself Again

ATC Action Line: Maximum and Minimum IFR Altitudes

FEBRUARY

The AirLand Battle— An Opportunity to Excel

9th CBAA: Air-To-Air; A Rude Awakening

RSI Report: Helicopter Tactical Refueling

MARCH

Pre-Positioning Of Army Aircraft

THREAT: You Can Trust The Russians

APRIL

Brigade Airspace Management, Part I: Historical Background

Nonelectronic Communications

MAY

Aerial Combat

Air-To-Air Workshop

ATC Action Line: Joint Use Of Military Airfields

JUNE

From Wood And Linen Kites To Metal Monsters

Flying With The U. S. Navy

THREAT: Soviet Combat Helicopters Today

Brigade Airspace Management, Part II: AirLand Battle

Hangar Talk: FM 1-203, Fundamentals Of Flight

Views From Readers: Soviet Air Defenses Against Attack Helicopters; British Light Helicopter Operations During The Falkland Islands Campaign: Part 1, The Deployment

JULY

Brigade Airspace Management, Part III: Command, Control And Communications

Views From Readers: Helicopter Air-To-Air; The Aviation Maintenance Officer

THREAT: Update Of Soviet Helicopters

HYDRA 70 And Army Attack Helicopters

AUGUST

Team spirit 84: An Army Aviation Overview

Profile Of Army Aviation in Korea

View From The Eagle's Nest

Brigade Airspace Management, Part IV: Training

Hangar Talk; FM 1-204, Night Flight Techniques And Procedures

RSI Report: Medical Employment Of Air Transport In The Forward Area

THREAT: Big Sky—Little Helicopter?

SEPTEMBER

Aviation Employment in The Special Purpose Operations

DES Report To The Field: Night Vision Goggles Training And Operations

THREAT: Second Generation Antitank Guided Missiles

Fit To Fight

Dustoff Does It Better

45th Transportation Company Keeps 'Em Flying

Operations continued

OCTOBER

Countering The Threat Radar

Views From Readers: Aviation Branch Proponency Team Briefing

Aviation Employment In Offensive Operations

Managing Team Spirit

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Army Aviation 1984 to 2015

Aviation Employment In Defensive Operations

Letter From LTG Carl E. Vuono, The AirLand Battle Doctrine

DECEMBER

THREAT: Warning, What You Say Will Be Used Against You

Organization

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School Model '83: New Organizational Structure at Ft. Rucker

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Combat Aviation Management System

Aviation Proponency Office

PEARL'S: TSARCOM—AVRADCOM Reorganization

DES Report To The Field: Standardization Hierarchy

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The AH-64 Apache Branch

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THREAT: Threat Branch

Aviation Logistics By Any Name

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Flying With The U. S. Navy

Aviation Personnel Notes: The Aviation Branch—What Took Place In MILPERCEN

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Army Aviation Policy Committee

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Reporting Final: Ft. Rucker Population Increase

How To Get The Aviation Digest

Views From Readers: Poem—Because I Fly

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Army Aviation Song Contest

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Army Aviation Museum Construction To Start

Views From Readers: Corresponding With Army Aircrewmembers; Change 1 to AR 95-1

Correction To Strategic And Tactical Pre-Positioning Of Army Aircraft

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Aviation Personnel Notes: The Aviation Branch Transfer—Is This Your Signature?

Annual Writing Awards

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The Tactical Map And You

Aviation Personnel Notes: Correction

Hangar Talk: FM 1-101, Aircraft Battlefield Countermeasures and Survivability

OCTOBER

THREAT: Threat Air Defense

DES Report To The Field: Update On UPDATE

PEARL'S: Water Purification Tablets, Iodine

Views From Readers: AH-1S Cobra Modification Program

How To Get The Aviation Digest

Aviation Lazer Hazards

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Project UPDATE

Accident Aftermath: What To Do When The Lawyer Calls

Golden Knights Seek Fixed Wing Aviators

Views From Readers: FM Guard Frequency; Renumbering Of Aviation Doctrinal Literature Publications From The 55 To The 1 Series

DECEMBER

PEARL'S: Guidance For Maximum Service Life For Food Packet, Survival, General Purpose

RSI Report: Procedures for Marshalling Helicopters in Multinational Land Operations

Army Aviation Museum: L-4

Views From Readers: Request For And Comments About Brigade Airspace Management Series

ATC Action Line: New Flight Plan

GOAL — $2,500,000

February 1985 — $1,480,000 cash and pledges

Army Aviation MUSEUM

This is a series about the Army Aviation Museum Foundation fund drive. Currently, plans call for building a modern complex to house your Army Aviation Museum. Since last month $2,500 in donations have been received. However, we still have a ways to go, as the barometer above shows. If you would like to help "build" the Army Aviation Museum's new home, you are invited to send a tax deductible contribution to: The Army Aviation Museum Foundation, Box H, Ft. Rucker, AL 36362-5000, If you desire additional information call Mr. Ed Brown at (205) 598-2508.

A Look At What's In Your Museum

The searchlight unit displayed is the first "Firefly" device developed and used in Vietnam. Donated to the U. S. Army Aviation Museum by the 334th Armed Helicopter Company, the device was originally called the "Lightning Bug" by servicemembers who were reminded of fireflies as the searchlights blinked on and off.

Mounted in the door of an armed UH-1 Huey helicopter, the unit was used to detect the night movements of the Viet Cong. It consists of seven C-123 aircraft landing lights and operates on the aircraft power supply. It develops about 1.2 million candlepower, can be swiveled in almost any position, and the light beam can be adjusted from pinpoint to floodlight beam width.

For more information see November 1967 issue (page 16) of the *Aviation Digest.*

PEARL'S

Personal Equipment And Rescue/survival Lowdown

Chung Mi Walker

Establishing an Air Force or Naval Publications Account

Air Force Publications. Some of the equipment used by the Army is procured through the Air Force. However, publications to support these interservice items are not always obtained. An Air Force publications account is established using the following guidelines.

- Complete two copies of Air Force Technical Order (AFTO) Form 43.
- Complete one copy of AFTO Form 187 (Resupply and Initial Distribution Form).
- Mail copies to Commander, Oklahoma City Air Logistics Center, ATTN: OC-ALC/M-MDUB, Tinker AFB, OK 73145.

Naval Publications. The Navy Index of Publications (NAV Sup 2002) is used to order Naval publicatons. NAV Sup 2002 is available only in microfiche and can be obtained by calling customer service, AUTOVON 442-4307. There is no charge for Naval publications, but there is a charge for blank forms. Permanent distribution of the index is obtained by writing to Naval Publications and Forms Center, 5801 Tabor Road, ATTN: CODE 1032, Philadelphia, PA 19120.

Once an account is established, order Naval publications using DD Form 1348M (for requisitioning instructions, refer to AR 725-50). An authorized Department of Defense activity address code (DODAAC) number is available from the unit supply document register and must be assigned to DD Form 1348M when ordering Naval publications. After establishing a proper unit identification code (UIC), publications are mailed to the address on the DODAAC. Publications can also be ordered by telephone (AUTOVON 442-3321) following the request format on DD Form 1348M. Permanent distribution of publications is achieved by writing to Commanding Officer, Naval Air Technical Services Facilities, 700 Robins Avenue, ATTN: CODE 321, Philadelphia, PA 19111. For coordination by telephone, call AUTOVON 442-4307. Binders are available for storage of publications through the same procedure as for ordering publications.

Military specifications and standards are also available through the Naval Publications and Forms Center, AUTOVON 442-4307. DD Form 1425 is used to request a copy of the index of specifications and standards. Once the initial index has been received, request all further orders on DD Form 1425.

This article was reprinted from *Flightfax,* 27 July to 2 August 1984, and from FM 55-411, 30 April 1984.

AR 95-17 Waivers

AR 95-17 was published 15 April 1984 with an effective date of 15 May 1984. This proliferated a rush of requests for waivers for the requirement for each crewmember to carry a survival radio. Prior to this, the survival radio shortage had surfaced at the Worldwide Aviation Logistics Conference. A working group consisting of individuals from the concerned commands was formed to attempt to rectify this problem. In the meantime, a blanket waiver was issued for 6 months to allow for an interim period of noncompliance and to insure a minimum of one survival radio per aircraft. This waiver has since been renewed for another 6 months and will continue on a 6 month cycle until the radio shortage

problem can be rectified. Other requests to give the major commanders the authority to grant waivers to AR 95-17 have been sent to the Department of the Army and have been denied. The reasoning behind this is that both DA and the Army Materiel Command Project Office are highly concerned for the safety and survivability of the Army aircrews. We realize there are logistical problems obtaining equipment and replacement parts and feel these problems should be surfaced and dealt with at the highest level to reduce the likelihood of this occurring again.

Again I reiterate that our biggest concern is the safety and survivability of Army aircrews and the enhancement of mission accomplishment. We realize that the present equipment is heavy, bulky and cumbersome, and we are taking steps to reduce the stresses and discomforts experienced by the aircrews. The research, development and acquisition process are tedious and time-consuming and we ask that you please bear with us through this transition period. Thank you for the support you provide to us through your letters and telephone calls and for your continued support of the Army aircrews.

ALSE MANUALS

The following is a list of Aviation life support equipment technical manuals and their changes:

TM NUMBER	DATE	CH	DESCRIPTION
TM 3-4230-216-10	7 Apr 82		Operator's manual for decontaminating kit, skin M258A1 and training aid skin decontaminating M58A1.
TM 3-4240-280-10	15 Jun 83		Operator's manual for mask, chemical biological aircraft ABC-M24 and tank M25 and M25A1 and accessories.
TM 3-4240-280-23&P	22 Mar 76	1	Organizational and direct support maintenance manual (including repair parts and special tools list), mask, chemical-biological aircraft ABC-M24 and accessories and mask, chemical-biological tank, M25/M25A1 and accessories (reprinted w/basic incl C1).
TM 5-4220-202-14	5 Oct 81	1	Maintenance instructions with parts breakdown USAF flotation equipment (TO 14S-1-102).
TM 9-1290-133-15	7 Nov 63	1-3	Operator's, organizational, direct support, general support and depot maintenance manual (including repair parts and special tools list) compass, magnetic, unmounted; M2 (FSN 1200-560-6380).
TM 9-1300-206	30 Aug 73	1-6	Ammunition and explosives standards (reprinted w/basic incl C1-6).
TM 9-1370-203-20&P	14 Nov 78	1-2	Organizational maintenance manual (including repair parts and special tools list) for military pyrotechnics (reprinted w/basic incl C1-2).
TM 9-1370-203-34&P	21 Jan 76	1-4	Direct support and general support maintenance manual (including repair parts and special tools list) for military pyrotechnics (reprinted w/basic incl C1-4).
TM 9-1370-206-10	28 Jul 78	1	Operator's manual pyrotechnic signals (reprinted w/basic incl C1)
TM 9-1370-207-10	30 Dec 83		Operator's manual for pyrotechnic simulators.
TM 9-1370-208-10	30 Nov 81		Photoflash cartridges, surface flares and miscellaneous pyrotechnic items operator's manual.
TM 9-4940-461-15P	4 Feb 70		Operator's organizational, direct support general support and depot maintenance repair parts and special tools list for separator oil and water, spray gun, wall mtd (Gray Co. Models 250-751 and 250-5321 (FSN 4940-242-4100).
TM 10-1670-1	1 Jun 83		Survival and emergency uses of parachutes (AFP 64-15).
TM 10-1670-201-23	30 Oct 73	1-5	Organizational and direct support maintenance manual for general maintenance of parachutes and other airdrop equipment (TO 13C-1-141, NAVAIR 13-1-17) (Reprinted w/basic incl C1-4).
TM 10-1670-213-10	18 Sep 75		Operator's manual for parachute, personnel, types 28 ft diameter, back; 28 ft diameter, chest, NB-8 back and Matin-Baker ejection seat harnesses.
TM 10-1670-213-23	18 Apr 69	1-9	Organizational and direct support maintenance manual (including repair parts and special tools list) for parachute, personnel, types 35 ft diameter; T-10 troop back; 35 ft diameter, maneuverable troop-diameter back, 28 ft diameter back; 28 ft diameter chest; 28 ft diameter back type NB-8 28 ft diameter seat type S-21, 24 ft diameter troop chest reserve 35 ft diameter troop back model MC1-1, MC1-1A and MC1-1B, 35 ft diameter troop back model T10A and T10B.
TM 10-1670-250-20	22 Nov 74	1-3	Organizational maintenance manual (including repair parts and special tools list). Parachute system used w/Martin-Baker MK-J5D ejection seat (reprinted w/basic incl C1-2).

TM NUMBER	DATE	CH	DESCRIPTION
TM 10-3530-202-24	17 Jun 64	1	Organizational and field maintenance manual; sewing machines for the repair of parachutes and allied equipment. (Singer models 112W116) (FSN 3530-892-4636), 131W113 (3530-222-3433), 7-33 (3530-892-4651), 97-10 (3530-241-3282), 17W15 (3530-892-4646), 55-5 (3530-892-4643), 111W155 (3530-359-8856) and 111W151 (3530-892-4629).
TM 10-8400-201-23	24 Jun 70	1-9	Organizational and direct support maintenance manual general repair procedures for clothing and individual equipment (reprinted w/basic incl C1-9).
TM 10-8400-202-13	16 Jan 84		Maintenance instructions for Nomex flight gear coveralls, types CWU-27/P and CWU-28/P; gloves, type GS-FRP-2; and winter, type CWU-45/P, hood, winter, flyer's (CWU-17/P jacket), jacket, flyer's summer type CWU-35/P trousers, flyer's, extreme cold weather, CWU-18/P (TO 14P3-1-(112).
TM 10-8415-206-13	13 Apr 72	1,3, 4	Operator, organizational and direct support maintenance manual (including repair parts and special tools list), helmet, flying protective (Model SPH-4, regular) (NSN 8415-00-144-4981) and (Model SPH-4, extra large) (8415-00-144-4985).
TM 10-8470-202-13	16 Jan 84		Operation and service instructions for ground and aircrew body armor (TO 14P3-1-102).
TM 10-8475-200-13	16 Jan 84		Use, inspection, fitting and maintenance instructions for antiexposure assembly, type CWU-21/P (TO 14P3-5-81).
TM 10-8475-202-13	6 Feb 84		Operation, service and maintenance instructions for quick donning antiexposure flying coverall, type CWU-16/P (TO 14P3-5-61) (this pub is a reprint of TO 14P3-5-61, 31 Mar 66 incl changes 1 thru 22).
TM 11-5820-640-15	10 May 67	1-5	Operator's organization, direct support, general support and depot maintenance manual radio sets, AN/URC-10, AN/URC-10A and ACR RT-10 (reprinted w/basic incl C1-5).
TM 11-5820-640-25P	26 Jan 71		Combined organizational, DS, GS, and depot maintenance repair parts and special tools lists, radio set AN/URC-10A, FSN 5821-134-5441.
TM 11-5820-800-12	30 Nov 73	1-4	Operator's and organizational maintenance manual (in

TM NUMBER	DATE	CH	DESCRIPTION
			cluding repair parts and special tools list) radio set, AN/PRC-90 (NSN 5820-00-782-5308) (reprinted w/basic incl C1-4).
TM 11-5820-801-30	22 Sep 80		Direct support maintenance manual for amplifier, parametric, AM-6602/MSC-46(V) (NSN 5895-00-100-4315).
TM 11-5965-279-13&P	15 Feb 81		Operator's, aviation unit, and aviation intermediate maintenance manual including repair parts and special tools list for headset-microphone kit, MK-896A/AIC (NSN 5965-00-930-8084).
TM11-5965-285-23	20 Apr 70		Organizational and DS maintenance manual including repair parts and special tool lists; headset-microphone 19LB-87.
TM 10-277	1 Nov 80		Chemical, toxicological and missile handlers clothing.
TM 11-6625-2631-14	30 Oct 73		Operator's, organizational, direct support and general support maintenance manual for test set, battery. TS-2530/UR (NSN 6625-00-933-6112) and TS-2530A/UR (6625-00-238-0223) (reprinted w/basic incl C1).
TM 38-230-1	1 Aug 82		Packaging of materiel; preservation (Vol 1) (DLAM 4145.2. NAVSUP Pub 502, AFP 71-15, MCO P4030 , 31C).
TM 38-230-2	15 Jun 77	1	Packaging of materiel; preservation (Vol 11) (DSAM 4145.2, Vol 11; NAVSUP Pub 503, Vol 11; AFP 7.1-16; MCO P4030.21C) (reprinted w/basic incl C1).
TM 38-250	22 Mar 76	1-4	Packaging and materials handling; preparation of hazardous materials for military air shipment (AFR 71-4; NAVSUP Pub 505; MCO P4030 19D, DLAM 4145.3) (reprinted w/basic incl C1-4).
TM 38-750	31 May 81	1	The Army Maintenance Management System (TAMMS).
TM 43-0002-1	30 Apr 74	1	Procedures for the destruction of air delivery equipment to prevent enemy use (TO 13C3-1-10 NAVAIR 13-1-19) (reprinted w/basic incl C1).
TM 55-1500-204-25/1	6 Apr 70	1-33	General Aircraft Maintenance Manual (reprinted w/basic incl C1-32).
TM 55-1680-308-24	13 Dec 74	1-4	Organizational, direct support, and general support maintenance manual ejection seats, model MK-J5D

TM NUMBER	DATE	CH	DESCRIPTION
			(Martin-Baker), part no. 134AB80000 (reprinted w/basic incl C1-4)
TM 55-1680-316-10	30 Apr 75		Operator's manual for rigid seat survival kit (FSN 1680-223-5759) and survival vest (FSN 1680-187-5715 and 1680-205-0474) (OV-1 aircraft).
TM 55-1680-317-23&P	8 Aug 75	1-2	Organizational and direct support maintenance manual (including repair parts and special tools list) for Army aircraft survival kits (reprinted w/basic incl C1).
TM 55-1680-317-CL-1	24 Aug 81		Checklist for individual hot climate survival kit, part no. 11-1-168 (NSN 1680-00-973-1861).
TM 55-1680-317-CL-2	24 Aug 81		Checklist for individual cold climate survival kit, part no. 11-1-170 (NSN 1680-00-973-1862).
TM 55-1680-317-CL-3	24 Aug 81		Checklist for individual overwater survival kit, part no. 11-1-172 (NSN 1680-00-973-1863).
TM 55-1680-317-CL-4	24 Aug 81		Checklist for SRU-21/P aircrew survival vest, part no. 11-1-1783 (NSN 8465-00-177-4819).
TM 55-1680-317-CL-5	24 Aug 81		Checklist for OV-1 aircraft, hot climate survival kit, part no. 11-1-1961 (NSN 1680-00-148-9234).
TM 55-1680-317-CL-6	24 Aug 81		Checklist for OV-1 aircraft, cold climate survival kit (RSSK), part no. 11-1-1960 (NSN 1680-00-148-9233).
TM 55-1680-317-CL-7	24 Aug 81		Checklist for OV-1 aircraft, overwater survival kit (RSSK), part no. 11-1-468 (NSN 1680-00-140-3540).
TM 55-1680-317-CL-8	24 Aug 81		Checklist for OV-1 aircraft, survival vest, small, part no. 11-1-468-1 (NSN 1680-00-187-5716) and large, part no..11-1-468-2 (1680-00-205-0474).
TM 55-1680-321-12	20 Jun 79		Inspection, maintenance, and disposition instructions; desalter kit, Type MK-2.
TM 55-1680-322-12	1 Aug 78		Operation and service; distress marker light, part no. SDU-5/E (FSN 6230-067-5209) (TO 14S10-2-2).
TM 55-4240-284-12&P	24 Jun 75		Operating and maintenance manual for rescue seat, forest penetrating (NSN 4240-00-199-7353) including repair parts and special tools list.
TM 55-8465-212-10	18 Jun 71		Operator's manual survival kit, cold climate, individual (FSN 8465-973-1862).
TM 55-8465-213-10	18 Jun 71		Operator's manual survival kit, hot climate, individual (FSN 8465-973-1861).
TM 55-8465-214-10	2 Aug 71		Operator's manual survival kit, overwater, individual (FSN 8465-973-1863).
TM 55-8465-215-10	9 Jun 70	1	Operator's manual for vest, survival SRU-21/P hot climate (FSN 8465-177-4819) (reprinted w/basic incl C1).
TM 57-220	4 Jun 68	1-3	Technical Training of Parachutists.
TM 740-90-1	12 Mar 71		Administrative Storage of Equipment
TM 743-200-1	15 Jan 58	2-24	Storage and Materials Handling (reprinted w/basic incl C1-24).
TM 750-244-1-2	22 Oct 71		Procedures for the Destruction of Life Support Equipment to Prevent Enemy Use.
TM 55-1660-247-12	20 Aug 84		MBU-12/P Pressure Demand Oxygen Mask.
TM 55-1660-248-12	31 Jul 84		Aircrew Chem-Defense Ensemble.

Film, Camouflage, Jungle and Desert—Unauthorized Use

I refer you to the article Camouflage for Helmet in the May 1982 PEARL'S. Since that time, new light has been shed on the subject.

Subject films (Jungle), NSN 8475-00-173-9054 and (Desert), NSN 8475-01-094-4566, are not authorized for use with helmet, flyer's, SPH-4, NSN 8415-00-144-4981/4985.

The U. S. Army Aeromedical Research Laboratory (USAARL) determined that use of film on the helmet shell is a safety hazard. A proper inspection on the helmet shell cannot be accomplished when this tape is applied. If there is a delamination or fracture in the shell, the film would prevent detection.

Maintenance personnel at U. S. Army Troop Support Command (TROSCOM) advised that the updated TM 10-8415-206-13, when published, will not include the film as an authorized item for use with the SPH-4 helmet.

Maintenance point of contact at TROSCOM is James Angelos, AUTOVON 693-3880.

USAARL point of contact is Joseph Licina, AUTOVON 558-6881/6897.

If you have a question about personal equipment or rescue/survival gear, write PEARL, AMC Project Officer, ATTN: AMCPO-ALSE; 4300 Goodfellow Blvd., St. Louis, MO 63120-1798 or call AUTOVON 693-1218/9 or Commercial 314-263-1218/9.

The AVIATION TACTICAL EXERCISE

Captain Vaughn L. Tate
Flight Instructor
Aviation Training Brigade
U. S. Army Aviation Center
Fort Rucker, AL

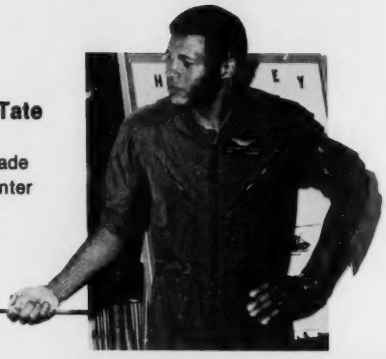


photo by PFC Tonya Dunn

THE TIME IS 0930 hours; an Aviation operations briefing officer clad in combat gear prepares to brief a group of future Army aviators who will conduct the final day's exercise Aviation Tactical (AVTAC). All around the bunker area the student pilots (SPs), also clad in combat gear, await the anticipated operations brief.

The briefer begins his presentation with, "Hello, I'm Captain Conners. Along with Captain Woodlee, I will be briefing you on day 5 of the AVTAC exercise. Today marks the final day of the 5-day AVTAC." Behind the briefer stands an operations map containing all the graphics that one could expect to see for an operation of this magnitude. Glancing at the map, the SPs perceive the amount of planning and coordination involved in this exercise.

After orienting the SPs to the map, the operations officer continues with his briefing. The friendly and enemy situations are briefed, as well as the intelligence summary. Now comes the mission statement, concept of operations, service support, and command and signal. The soon to be airmission commander (AMC) and team leaders listen intently to the briefer as he defines and clarifies team responsibilities.

Finally, the briefing is over and the operations officer asks, "Are there any questions?" Some questions are asked, but not that many. It was a good briefing. The student AMC and team leaders are selected. They anxiously begin performing their tasks as "leaders." For the day before, their classmates had received a similar briefing on AVTAC day 4 from Captain Pack of the aeroscouts.

The AVTAC exercise is designed to provide the Initial Entry Rotary Wing (IERW) student with the opportunity to actually get involved with all the mechanics of planning an air assault mission as well as carrying out its execution. Students who are participating in this exercise are at different levels of training in their Aviation skills and not all of them are IERW SPs. The AH-1 Cobra students are rated aviators and are about to graduate from the

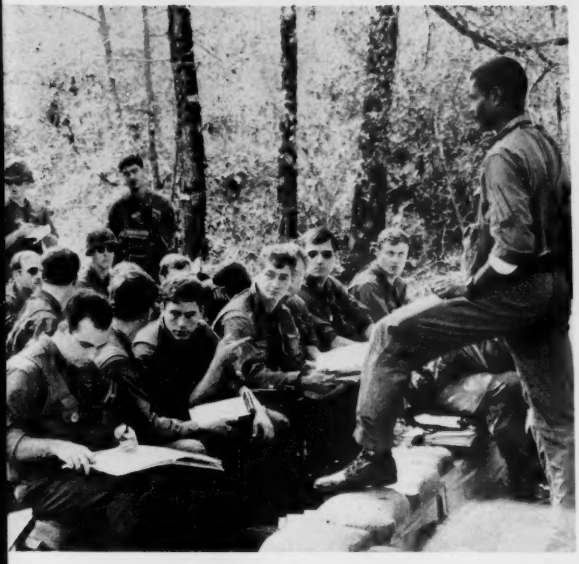
Cobra Aircraft Qualification Course. The utility students have completed their end of phase evaluation in advanced combat skills and are only days from completion of flight training. The aeroscout students are not quite as far along as their counterparts, the utility students, and must complete their tactics checkrides and then complete the night/night vision goggles portion of flight school.

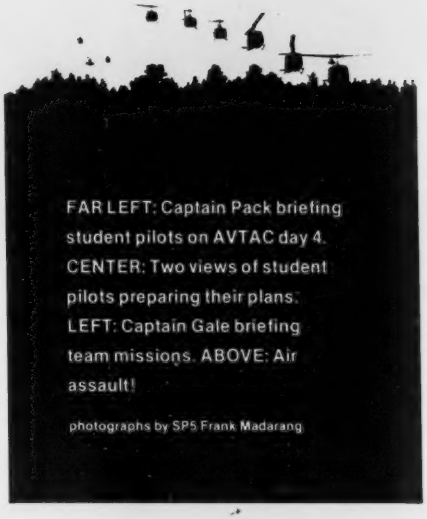
The scenario is twofold:

• *First,* in a low intensity environment involving aeroscout, attack and utility assets, an air assault force of battalion size is inserted near the international boundary of a friendly developing nation with the mission to destroy enemy blockades and ammunition storage sites, as well as to secure the area.

• *Second,* the mission is structured around a high-risk battlefield in which friendly Aviation assets (including aeroscout, attack, utility and medium lift helicopters) conduct cross-FLOT (forward line of own troops) operations deep into the opposing force's rear area, thus disrupting the enemy's ability to effectively initiate the offensive.

The AVTAC exercise encompasses 5 days. During the first 3 days of training, SPs receive intense instruction and practice on company, platoon and team level tactical operations. On day 1 aeroscouts perform dry-fire joint air attack team missions. Day 2 consists of a live-fire exercise with aeroscout pilots adjusting artillery fire as well as coordinating the handover of targets between the AH-1s and the Air Force A-10s. Day 3 consists primarily of air cavalry training. On day 4, the aeroscouts along with attack helicopters establish aerial blocking positions as well as provide security for air assault elements that are inserting the ground force elements. The exercise culminates on day 5 with a corps level cross-FLOT operation in which an air assault force, composed of a reinforced rifle company equipped with Stingers and complemented with engineer teams, is inserted deep into the enemy's rear area with the mission to conduct a raid on the threat's divi-





FAR LEFT: Captain Pack briefing student pilots on AVTAC day 4. CENTER: Two views of student pilots preparing their plans. LEFT: Captain Gale briefing team missions. ABOVE: Air assault!

photographs by SP5 Frank Madarang

sional command and control element.

The scenario continues with the corps exploiting the success of the air assault forces and pressing the attack in depth.

AVTAC assists the IERW SP in becoming familiar with techniques of how to employ aeroscout, attack and assault helicopters on the modern nonlinear battlefield. The use of initiative is stressed to all student planners during the planning and conduct of the mission. During days 4 and 5, SPs receive a thorough tactical briefing in a field environment from instructors acting as operations officers at the battalion level. All of the SPs receive the briefing. Then, student AMCs and team leaders are selected. These SPs proceed to formulate and prepare their individual team plans. This is the point at which SPs become actively involved with the actual planning phase.

Under the supervision of instructors, who are acting as pilots in command and advisors, SPs perform such tasks as fire support coordination, suppression of enemy air defense (SEAD), updating intelligence information, calculating times en route, reviewing special team missions, coordinating communication procedures and logistical support, as well as ingress and egress operations, and downed aircraft actions.

After the planning and coordination phase, the SPs brief their respective team members and prepare for departure and the implementation of their plans. With the missions completed, SPs return with their instructors to the assembly areas to be debriefed. The debrief derives input from both the SP and instructor pilot, maximizing the cumulative training benefit.

The AVTAC exercise is the building block that will provide initial entry rotary wing students with a solid foundation, and it will enable them to arrive in the field with a better understanding of how to plan, brief, perform and debrief the demanding Aviation missions that may arise on the modern battlefield. Student pilots become familiar with the importance of SEAD as well as

ABOVE: AH-1S Cobras await instructions. INSET: The landing zone is secure

how to employ this concept together with Air Force systems. With a brief introduction to the tenets of AirLand Battle of initiative, depth, agility and synchronization, SPs also are taught techniques of avoidance and deception. These are just some of the myriad tasks that AVTAC can assist students to prepare for when they will later face the challenges of fighting today's AirLand Battle. AVTAC is indeed innovative, with its focus on the goal of developing Army aviators who will demonstrate initiative and sound leadership.

Mission Accomplished

"So You'd Like To Be An Instrument Flight Examiner?"

CW3 Burtis W. Verhaar III
Aviation Training Brigade
U. S. Army Aviation Center
Fort Rucker, AL

WHEN MOST aviators receive orders to the Rotary Wing Instrument Flight Examiner Course (RWIFEC) at the Army Aviation Center, Ft. Rucker, AL, they'll gaze at them for a few moments with mixed emotions. Certainly there is a degree of pride for having been selected to attend the course, but a bit of anxiety may cross their minds as well. The latter is probably the result of stories told by the "crusty" CW4 unit examiner, or possibly by an individual who was enrolled in the course but did not complete it for any number of reasons. There are thoughts like how difficult will it be and will I complete it satisfactorily?

Aviators with strong instrument backgrounds— or those who just enjoy instrument flight—will find the

course more easily negotiated and enjoyable, not to mention educational. On the other hand, aviators who tend to shy away from instrument flight will find the RWIFEC to be more of a burden than a pleasure.

The key to doing well in the course is to enter it as well prepared as possible. Obviously, the whole idea of this article is to get aviators prepared and eligible for entry into the course.

The course does have some prerequisites as per Department of the Army Pamphlet 351-4 and they are:

- Be an Active Duty or Reserve Component commissioned or warrant officer.
- Have held a fixed or rotary wing instrument rating for the past year.
- Have at least 10 hours of actual instrument time.
- Have a minimum of 1,000 hours pilot time, of which 500 must be in rotary wing.
- Be current in a UH-1 Huey.
- Be a qualified instructor pilot (IP).
- Must have a letter certifying instrument proficiency from an instrument flight examiner (IFE) of the standardization board in the Army area to which assigned, and current within 90 days.

Sounds like quite a bit, doesn't it? Actually, every item listed is waiverable. One thing which is looked at hard, however, is the proficiency letter from the IFE. If you show up for the course without your letter, you are put on a 5-hour waiver. That means that we fly you for 5 hours and if at the end of the 5 hours your IP doesn't think you have what it takes to successfully complete the course, you're sent home with no further action. This is not the same as elimination for a flight deficiency. This simply means you were not qualified to be in the course in the first place and you'll be welcome to come back and try again when you are qualified.

The RWIFEC lasts 6 weeks and is divided into two parts, referred to as stage I and stage II. In stage I, *or the pilot phase,* you'll essentially take an instrument checkride every day. This is really not anything to be upset over or concerned with as you'll be expected to exercise the same good judgment and perform just as you would on any other instrument flight when you are acting as pilot in command. Examiners must be thoroughly familiar with and proficient at instrument flight before they can expect that from their examinees. The successful completion of stage I ensures this proficiency.

Stage II, *or the student examiner phase,* marks the end of your "vacation" and the beginning of hard work. Most people don't believe this statement to be true until they get into stage II. In this phase you'll administer an instrument checkride to a member of the new class each day, and about this time you'll begin to realize how much you appreciate your efforts while you were in stage I. Pilot procedures will have to be second nature to you, as you're being exposed to techniques involved in giving, rather than taking, an instrument evaluation.

As with most flight courses at the Aviation Center, your training day is broken into halves, one being spent in academic classes and the other at the flight line or simulator. The information covered at the flight line and in the classroom runs parallel (as much as possible) to flight instruction. Thus, good background information is covered. The areas covered most heavily in academics are airspace, navigational aids, terminal instrument procedures, weather and instructor techniques. Academic class attendence continues through all of stage I and about half of stage II. There are two examinations which must be successfully completed. The topics covered in academics will be reinforced by practical application and discussion at the flight line.

Probably more so than in any other course at the Aviation Center, considerable time and effort are devoted to the daily questions assigned by the flight line. You will have to prepare answers to daily questions for stage I and stage II and the questions are intended to dovetail, although there are specific questions for each stage. This way both sets of students get maximum benefit from the time spent.

During your 6-week stay you'll be exposed to both sets of questions twice so what you did not thoroughly absorb the first time around you will the second time. For most people the second exposure to the question is when they ***retain*** the most about the subjects being discussed. This is because the questions are intended to be for discussion and normally use several references as sources of information. The procedure results in maximum information being covered, and the more exposure one has to it, the more complete the learning process.

The subject matter of the questions is instrument related and it is material that all instrument pilots should know. There also will be a block of dash 10 questions to complete and these will be finished in one day of the simulator phase. The daily questions are completed during the flight simulator portion of the course which is the first seven training days.

For each daily flight you may be assigned a mission to fly from point A to point B and return, or something similar. You'll be expected to arrive with a completed DD 175 (IFR) and all other necessary forms and papers completed. If you received your mission after you arrived, you'll be expected to complete these items prior to flight and within a certain period of time. You'll also go through a rather extensive oral exam by the student IFE prior to the flight. By the way, all training will be done in a UH-1H or UH-1FS so you will be responsible for learning and retaining the information in the UH-1 dash 10.

Upon completion of the oral briefing you'll go to the aircraft or flight simulator and get a chance to "show your stuff." Following the flight, you'll return to the briefing room for a debriefing of your performance and to review the next day's assignment. The remainder of your day you'll spend in academic classes. This will be the daily routine you can look forward to for 15 training days during stage I and stage II until you finish academic classes.

Prior to arrival for the course, many aviators ask, "How should I best prepare to enter the course? Should I fly 50 hours in the simulator with an IFE?" etc., etc. Individuals are the best judges of their strengths and weaknesses, but whether they'll admit them is another story. The *best single place to start* preparation is in *the areas of greatest weakness or weaknesses.* From the standpoint of the instructors, who have seen many students enter the course, the area of greatest weakness seems to be the information found in instrument related publications. By and large, the students' greatest deficiency is lack of knowledge of pilot procedures and weakness in understanding how the air traffic control system works. Remember, upon entry to the course you're supposed to be a "proficient" instrument pilot. If you don't know what's in the books you're not going to have an easy time in the course. Publications to be familiar with are all DOD FLIPs; AR 95-1; Federal Aviation Regulations (especially part 91); Airman's Information Manual (know this thoroughly); and if you're really energetic, 7110.65C (Air Traffic Controller's Manual).

There is another point that should be emphasized, and this is something most students find different from other courses and, in some cases, difficult to adjust to. This course is designed to teach aviators to become evaluators—not copilots, first pilots or instructor pilots. For this reason, while you are in stage I you will bear the responsibility to see that everthing that is required to be accomplished is accomplished. Also, you'll physically do all those things yourself, except actually changing radio frequencies. Although you have a qualified copilot in the left seat he or she will not make up for your inefficiency and act as your unit copilot normally would.

You'll be put in a situation where you'll be a one person operation. This is so that your IP can evaluate how you operate under these conditions. Although you may not understand or appreciate why this is being done to you while it's happening, it does have a purpose. Possibly years from now it will happen that you're in instrument meteorological conditions (IMC) and suddenly you discover that the aviator you're evaluating loses control of the aircraft and really cannot fly under those conditions. About this time maybe other things begin going rapidly down the tubes and you are going to find that once again, you're a one person operation, but now you are IMC and *this time it is for real.* About the time you've got the situation under control, you'll think back to all those dirty, nasty, hopelessly impossible situations your instrument IP put you in at the Aviation Center and how you managed to think your way out of them. Then you'll say, "Thanks for the training you gave me. Now I understand why you did it."

This is what makes the RWIFEC different from any other course of instruction in Army Aviation.

The program of instruction has a tremendous amount of information to be covered in 6 weeks and for this reason the instructors do not "mince" words. If you're having difficulties, you'll be told. Conversely, if you're doing a good job you'll also be told. If you're the type whose feelings are easily hurt, keep this thought in mind.

I've given what I believe to be a brief but comprehensive rundown of the way the course is conducted and the areas of emphasis for study prior to arrival. Once again, the publications for study should be DOD FLIP, AR 95-1, Airman's Information Manual and Federal Aviation Regulations (especially part 91). Keep in mind that you'll be evaluated daily on how well you operate under less than ideal circumstances. So, come prepared to work, keep a good attitude and remember that your IP is only putting you in certain situations to help you and to teach you. If you're in doubt about something give us a call at AUTOVON 558-3875/5820.

① *Novosel enlisted in the Army Air Corps in 1941 and was soon accepted as a flying cadet.*

② *Novosel stands beside the PT-19 after he soloed in it in the spring of 1942.*

③ *By April 1942 Cadet Novosel was well into the flight training program.*

④ *In July 1942 Novosel flies a BT-13 during formation flight training at Waco Army Flying School in Texas.*

⑤&⑥ *As a captain, Novosel was a B-29 bomber aircraft commander flying combat missions from the Island of Tinian in the Marianas during World War II.*

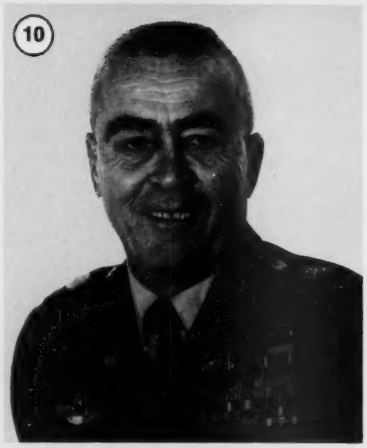
NOVOSEL RETIRED

CW4 Michael J. Novosel, a World War II aviator who wears the Medal of Honor, was retired in December 1984 at the Army Aviation Center, Ft. Rucker, AL.

More detail about CW4 Novosel's exemplary career can be found in "Honor Times 29" in the January 1974 Aviation Digest, and in "Army Aviation Hall of Fame" in the September 1976 issue. CW4 Novosel authored "Blind Flying" (June 1979), "From Wood and Linen Kites to Metal Monsters" (June 1984) Aviation Digest and "Pilots I Have Known" on page 40 of this issue.

⑦&⑧ *During the Vietnam War, Novosel was a Dustoff pilot. He evacuated more than 5,500 wounded. At age 48, he became the oldest member of the Army in that war to be awarded the Medal of Honor for repeated bravery in the face of heavy Viet Cong gunfire: On 2 October 1969, he extracted 29 wounded South Vietnamese soldiers during 2½ hours of intense combat flying during which he was wounded.*

⑨ *Novosel (right) and his son, CW3 Michael J. Novosel Jr., flew medical evacuation missions in Vietnam when they were assigned together in 1970. Above, they recall their Vietnam experiences when in 1981 they were both assigned to the Aviation Center at Ft. Rucker, AL.*



⑩ *Before his retirement Novosel was the last military aviator on flying status who flew combat missions during World War II.*

photo by John Bohmer

⑪ *During Novosel's retirement ceremony, Major General Bobby J. Maddox (right) presents him with a plaque that signifies the renaming of Ft. Rucker's main street to Novosel Street.*

photo by Kelly Longbine

⑫ *"Farewell!"*

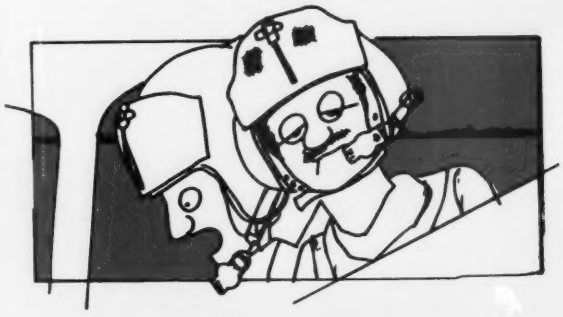
MONTHLY WRITING AWARD

Pilots I Have Known

CW4 Michael J. Novosel

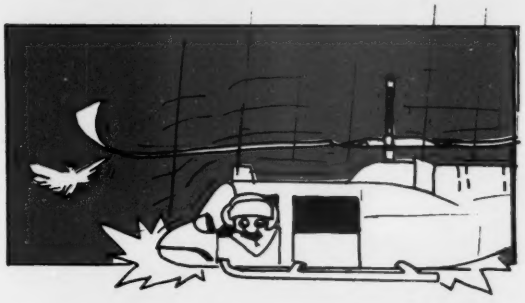
DURING MY MILITARY aviation career I have come to know quite a few aviators; some good, some bad. Most, however, fall somewhere between the two extremes. Still, military pilots of all the services are a complex lot, and deserve a more detailed analysis. In thinking back to all the pilots with whom I have been acquainted, I would have to place them into several definable groups. The reader should be able to relate to each, and probably be able to define other groups, but here is the way that I have sorted out some of my associates in military aviation.

First, there's aviator **Rivet-Counter**. This is the smart fellow who has made an avocation out of trivia. He can tell you how far the UH-1 Huey pilot's seat moves with one complete turn of the seat adjustment knob. He will pore over his operator's manual; gleaning little known facts that he will develop into questions to amaze an unsuspecting crewchief, flight engineer or copilot. Rivet-Counter goes after his prey with questions such as, "Why is the Huey electrical system defined as a 28 volt system when it has a 24 volt battery and a 30 volt generator?" Or, "If an aircraft is inverted and inbound during an instrument landing system (ILS) approach, is the ILS instrument directional or nondirectional?" Another favorite of his is, "When flying through a Middle Marker (transmits alternating dots and dashes), which do you hear first; the dot or the dash?" This character is probably unsure of his flying ability and attempts to hide his deficiency with smoke generated by a lot of garbage. I personally suspect Rivet-Counter to be the inventor of the annual writ.

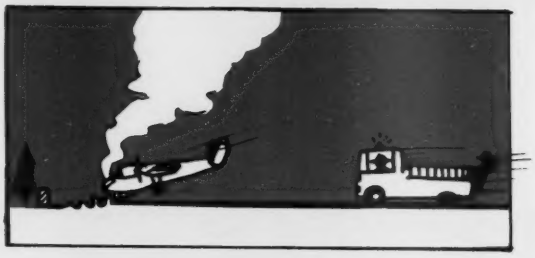


How about the **Nonstandardized Standardization Pilot**. If you've ever taken an evaluation check ride with this type, you have had no problem in identifying him. He generally comes across with, "The aircrew

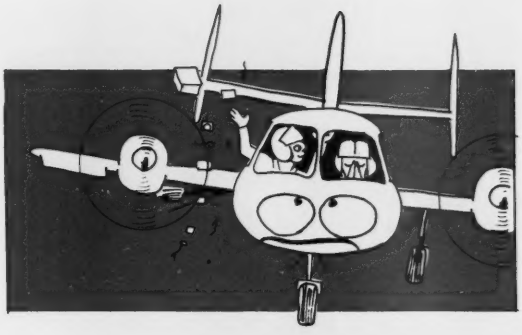
training manual (ATM) is wrong—this is the way to do that maneuver." "Those people who write the ATMs should get out of their ivory towers and see what the real world is all about." He will usually follow that up with, "Those idiots who make up Army Regulation 95-1 are just as bad; I've never see such trash." Of course, if you're a recent graduate you will probably get the full treatment; "What the devil do they teach you people in flight school? I've never seen such crummy flying. Looks like they're graduating every yahoo that enters the program! Today's aviator would never have made it in my day. When I was in flight school—etc.—etc.—"



Hot Shot Charlie is one pilot that every outfit does *not* need, but that too many units have at least one of. Charles is too often thought to be a LT/CPT or WO1/CW2, but he can be found at most grade levels. Years ago when an Army pilot was guilty of "buzzing," the usual fine was $100 a month for 12 months. That put a considerable dent in the pocketbook at a time when the total pay of a 2LT pilot was $245 a month. I can't understand why today, when we are trying to keep our accident rate down, some commanders merely "issue" the errant aviator another aircraft after he totals one in a river gorge while filed for an admin flight at 2,000 feet. "Not so," you say. How about the senior aviator who hit wires and totaled the aircraft after he had been admonished *twice* by his commander for "reported hot-rodding." I'm telling it as it is when I say that "reported hot-rodding" is the tip of the "Hot Shot iceberg"—for each report there were probably 10 instances that went undiscovered and unreported. If you believe that the aviator involved in the above noted wire strike was a slow learner, you are not tuned to my wave-length. I submit that the slow learner was the commander.

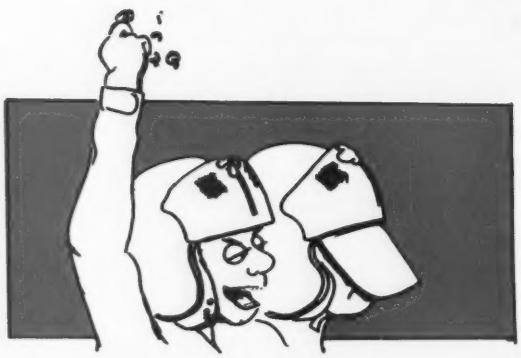


D. Sierra is one aviator who never seems to have his stuff stacked up right. He will land on the numbers of a 12,000 foot long runway and hover or taxi 3,000 or 4,000 feet to a turnoff, delaying all other operations. When leading a nine ship gaggle in trail, he will invariably bring in the formation downwind on the short axis of a rectangular land zone. Pilot Sierra's autorotations will terminate with no ground run when the density altitude is 4,000 feet and the wind calm; while he has been known to skid the length of the lane in the middle of winter into a 20 knot gale.

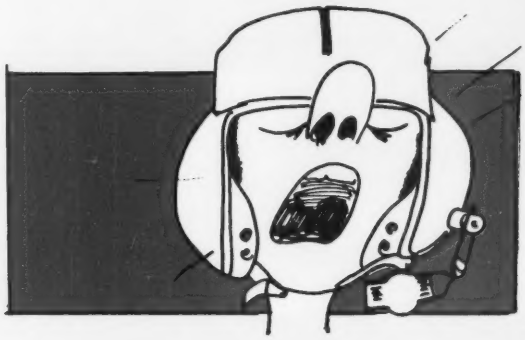


Let's not forget **Check Pilot Switcher**. He delights in turning things off that make our flying machines go. Every pilot agrees that emergency procedures are necessary for a valid flight evaluation, but they should

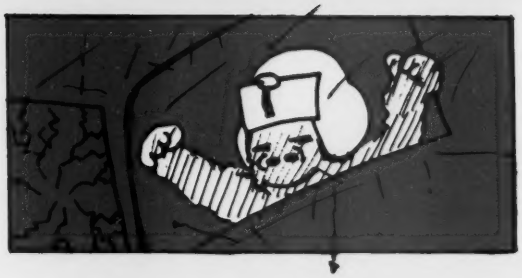
be a continuation of the learning process and a reinforcement of skills acquired. Our man Switcher has his own ideas, however. After he simulates engine failure, he is apt to fool around with the flaps; and if he's in real good form, pulling the landing gear circuit breaker just about makes his day. If you handle all this without losing your cool, you may be some wiseacre who is about ready to "bust" a checkride. There are many more switches, circuit breakers and systems under our man's control. The above is an example of a fixed wing Switcher—you rotor heads watch out; there are rotary wing Switchers, also. You're right, we don't need them, but I assure you that there'll always be a Switcher around.



Then there's **I.F.E. Stickler**; he's related to Check Pilot Switcher. Stickler's instrument evaluations are mind-blowing exercises, having absolutely nothing to do with the real world of instrument flying. His is a world of failures—if it's not the engine then it's the inverter, or the attitude indicator, or the radio/remote magnetic indicator, or the commo system, or the navigational radios. Stickler thinks it's great to order you into a holding pattern 90 degrees to the route of flight; whereas no self-respecting professional controller would ever dream of such an inane stunt. Even if you pass his evaluation, there is no proof that you can perform a safe instrument flight—all that is known is that you can somehow cope with an IFE who cuts off the throttle, turns off switches and pulls circuit breakers, while you are trying to stay upright on partial panel.

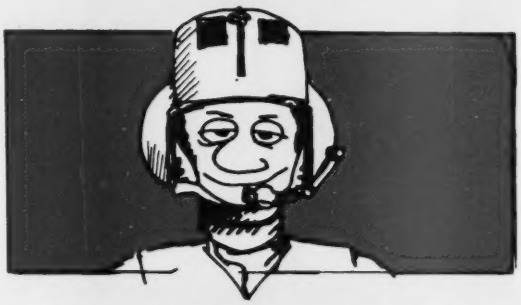


Loudermouth is another pilot I have known, and wish that I hadn't. He is the scourge of the operations section, the flight line and the air traffic control (ATC) system. He has words for all of them. Loudermouth will file an instrument flight rules (IFR) flight plan and let his displeasure be known when "clearance delivery" cannot forward it to him in 15 minutes. The weather section is always reminded of the forecast they blew a year ago. The poor flight line mechanic is given a severe dressing down for an entry in the aircraft log that Loudermouth maintains is not necessary. The tower operator gets it too, when landing traffic delays his takeoff for a few minutes. ATC is not immune to the wrath of Loudermouth either; they get their share when the assigned altitude is 8,000 feet instead of the requested 6,000. This man is an embarrassment to the whole system, but there will always be a Loudermouth. I always try to put good distance between myself and Loudermouth, and try to give the impression that I really don't know him.



G. O. Rilla is another pilot that one may come across. Fortunately for aviation, there are not too many Rilla's around. He has been known to pull in 65 pounds of torque in a Huey; popping every nut, bolt and rivet, as the tail cone is permanently deformed. The crewchief cringes as this knuckle-dragger pushes and pulls on control tubes, bell cranks, linkages and cables. The clearances were probably within limits when our man Rilla started his preflight, but definitely not after. He is known to attack rotary and fixed wing aircraft with equal ferocity. Aviator G. O. Rilla is a ham-handed operator who makes every landing look and feel like a controlled crash.

An odd sort of aviator is the one that I prefer to call **Ace.** This character has a repertoire of combat experiences that would put a Hollywood script writer to shame. Ace, like the parrot, is a good talker, but not too good a flyer. Still, his recollections of minute details of his many emergencies, IFR flights and associated problems is surpassed only by his ability to drop names. Ace has known, drunk beer with or flown with every "Star Pilot" in the service, and he will name them all if you are willing to listen. He has had engines fail, drop off, catch fire and blow up—he doesn't mention that it was his abusive operation that caused most of his problems. His combat stories get hotter and more hair-raising with each retelling. He gets shot down so often that one gets the impression that he spent more hours walking than flying—which is probably the reason that in two combat tours in Vietnam he only logged 400 hours. Poor Ace; he's not familiar with the "Law of Ananias," which states that, "The more dramatic the tale of combat, the more removed from the scene of battle was the narrator."



Typical of the final grouping is pilot **A. V. Ridge.** His group is the largest by far and is representative of the day-to-day working military aviator. Hopefuly, all of the previously discussed pilots I have known do not constitute more than 1 or 2 percent of the total force. Aviator Ridge doesn't know tricky questions, nor does he concern himself with odd-ball situations as does Rivet-Counter. He humors the opinionated standardization pilot who perpetually denigrates the system, and makes a note to avoid him, if he can. Ridge and his associates do their best to steer Charles and Sierra in the right direction, and make them positive contributors to the mission of the unit. He grits his teeth, tolerates and muddles through the abuses laid on by Switcher and Stickler. Pilot Ridge would rather not be around Loudermouth, and when flying with Rilla, monopolizes the preflight and does his best to avoid shooting landings. Our man A. V. Ridge, upon seeing Ace at one end of the bar, makes a dash for the other. Aviator Ridge is the heart and soul of every aviation outfit. He is part of the solution and not the problem. In which group are you? Did I miss somebody? How about writing in and telling us about him.

The Army's "AIM"

CW4 Peter C. McHugh (USA Retired)

ENTRY INTO Army Aviation is always accompanied by issue of a mountain of study material. Somewhere in the stack, with Federal Aviation Regulations and field manuals, will be a copy of the Airman's Information Manual (AIM). No other publication, except perhaps Army Regulation 95-1, is more frequently referenced or in greater demand among aviators.

First published as "Weekly Notices to Airmen, NOTAM" in 1939, AIM changed little until 1946. It was then expanded to include nonperishable information and was renamed "Airmen's Guide."

In 1961, Federal Aviation Agency's newly formed Flight Information Division (AT 400) was charged to determine if the Airmen's Guide and other existing publications met user requirements and to identify their audience. This effort produced two significant actions. First, FAA's General Counsel rendered a legal opinion in 1963 that the AIM program was an activity authorized by the FAA Act of 1958, and in 1964 the "Guide" was combined with the "Flight Information Manual." The new documents appeared as:

Part 1—Basic Flight Manual and ATC Procedures.
Part 2—Airport Directory.
Part 3—Operational Data and NOTAM.
Part 3A—NOTAM, Class II.
Part 4—Graphic Notices and Supplemental Data.

Demand for improved responsiveness pushed Part 1 to a quarterly revision cycle by 1966. Aviator references to today's AIM as "Part 1" reflects the popularity of that manual.

Prodding by users caused FAA to conduct a comprehensive survey of fixed base operators, aviation associations, flight schools and instructors during an extensive project to reduce verbiage, simplify wording, clarify obscure points and update all material in the AIM. Input from that survey was implemented by fall 1969.

The landmark crash of TWA Flight 514 into Mount Weather in 1974 was a product of misunderstanding terminology and resulted in renewed interest in improving AIM. A task group composed of representatives from such agencies as FAA, National Transportation Safety Board, DOD, and from Mitre Corporation (a consulting firm), evolved into the current Air Traffic Procedures Advisory Committee (ATPAC). The ATPAC has addressed about 300 recommendations stemming from TWA Flight 514. Among these, many of which related to AIM, was the proposal to add the Pilot/Controller Glossary. The task group also found that as the price of the subscription rose from $4.00 in 1969 to $7.60 in 1975, the number of subscriptions dropped from 41,000 to 21,000. This alarming trend continues and today there are about 13,000 subscribers. The FAA estimates that more than 5 people use each copy, but even fewer than 60,000 of more than 900,000 certificated pilots have access to AIM.

The Aeronautical Services Office distributes more than 5,500 copies for the Army which is the largest single subscriber. A subscription today costs $19.00. Since the DOD has limited control of AIM contents and provides minimal input, the AIM is not responsive to Army Aviation needs. A paradox exists since AIM is a civil, nondirective publication and DOD FLIPS are regulatory. DOD FLIP and AR 95-1 are directive, have global application and should receive primary emphasis in Army training and standardization.

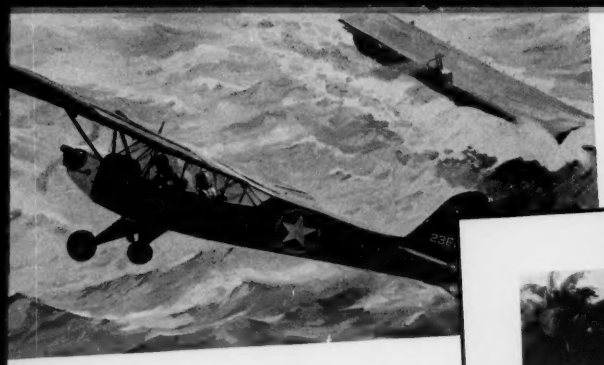
That idea is amplified by recent FAA proposals to split AIM. Despite vigorous opposition from members of the National Airspace Review (NAR) Task Group considering AIM format, the FAA may be successful in dividing the publication. They propose to publish a section tentatively called "The Pilots Safety Handbook" which would contain relatively perishable information. The second section containing more permanent data would be published less frequently in today's AIM format. While distribution of the safety handbook is intended to be free of cost, other benefits of the proposal are obscure.

The NAR Task Group ultimately recommended retaining AIM intact but that its publication cycle be extended to 2 years. They felt that its purpose as a "training aid" should be clearly stated. This and other recommendations, when implemented, make AIM less responsive to Army needs and lend greater credence to DOD FLIP being the primary procedures and flight information reference for Army Aviation. The Aeronautical Services Office seeks comments regarding the relative merits of AIM and DOD FLIP, and identification of material for inclusion in FLIP. Send comments to:

USAATCA Aeronautical Services Office
ATTN: ASQ-AS-AI
Cameron Station
Alexandria, VA 22304-5050

or call AUTOVON 284-7773; Commercial (202) 274-7773.

Readers are encouraged to address matters concerning air traffic control to Director, USAATCA Aeronautical Services Office, Cameron Station, Alexandria, VA 22304-5050.



CANVASSING WITH CANVASES

As part of their program of museum support, the Singer Company has recently produced a limited edition of 12 color reproductions of paintings of Army aircraft from the L-4 Cub to the AH-64 Apache with "The Evolution of Army Aviation" as its theme. These reproductions, suitable for framing, are signed by the artists—Robert C. Sherry, Robert D. Sloan and Jeffrey S. Boyer. Some of these reproduced paintings will be featured in future issues of the Aviation Digest. In recognition of your individual contribution of $100.00, you will receive a set of these reproduced paintings along with your Certificate of Life Membership in the museum foundation. Additionally, as a life member your name will be engraved on a permanent wall in the Army Aviation Branch Museum. For more information on the Army Aviation Museum see page 25.

I have just received a letter from MG Ellis D. Parker, commander, U. S. Army Aviation Center and Ft. Rucker, AL. General Parker points out that with Army Aviation now a branch, we need to better disseminate information about our preparations for the AirLand Battle of tomorrow; and must have a uniquely important section of our battlefield preparation within Aviation maintenance. He also advises that while the Army Aviation Digest *provides a major means of publizing the importance of Aviation maintenance, this has been the weakest area of coverage in the* Army Aviation Digest, *especially articles authored by enlisted soldiers.*

MG Aaron L. Lilley Jr., commandant, U. S. Army Transportation and Aviation Logistics School, Ft. Eustis, VA, suggests a column devoted to Aviation logistics each month in the Army Aviation Digest. *I think this is a great idea and have been advised that such a column could begin this month.*

Will you please pass on to all of your Aviation folk that here is a wonderful opportunity that we should capture. The articles can be written by officers, warrant officers, enlisted personnel or civilians. They need not be written by Aviation logisticians, but the thrust should be toward Aviation logistics and support of Aviation in the field.

For your information, an article for a full page in the Army Aviation Digest *should be 2 to 2¼ double spaced, typewritten pages with about 66 characters per line. I would suggest that any detailed questions concerning longer articles or those containing charts or pictures should be referred to Mr. Dick Tierney,* Army Aviation Digest *Editor, P. O. Drawer P, Ft. Rucker, AL 36362-5000; AUTOVON 558-3619/6680, FTS 533-3619/6680.*

Your personal attention and widest possible announcement of this exceptional opportunity to tell the story about Army Aviation maintenance will be much appreciated.

Joseph P. Cribbins
Special Assistant to the
Deputy Chief of Staff for Logistics